

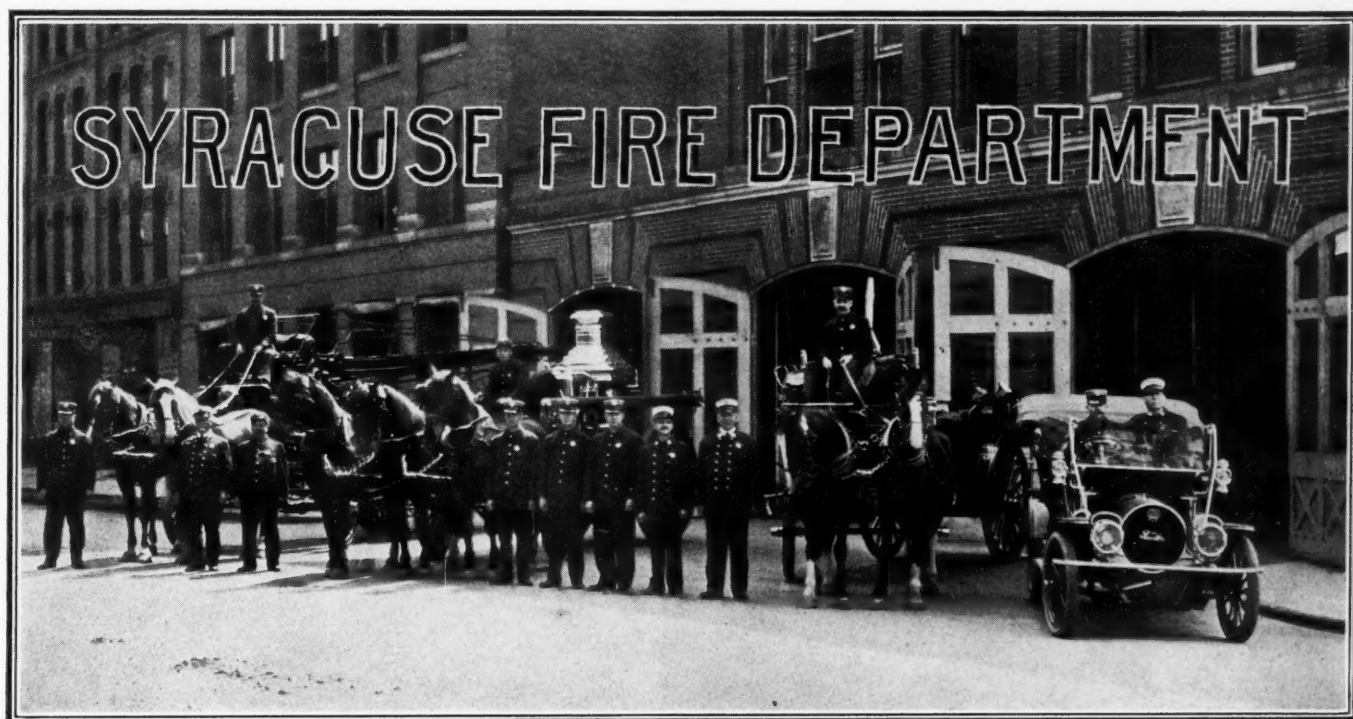
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ENGINE HOUSE NO. 6. CHIEF QUIGLEY IN HIS TOURING CAR

THE Fire Department of Syracuse, N. Y., contains on its roster 161 men in service, including 4 assistant chiefs with full pay. The apparatus comprises 10 steam fire engines, 9 hose wagons, 2 combination wagons, 4 hook and ladder trucks (all aerial), a water tower, and, in addition, a number of supply wagons, exercising wagons, sleighs of several kinds, etc. There are 79 horses, 72 of which are required in service, and seven are kept at the hospital stable. The seven last mentioned are kept as a reserve and are used as substitutes for any horses which may be injured or otherwise out of service temporarily. All the apparatus is horse-drawn except the touring car of the chief, John P. Quigley. Chief Quigley is said to favor auto apparatus for certain classes, at least, and it is possible that some of the apparatus to be added in the future will be auto.

There are ten engine companies, two combination companies, one water tower company and four hook and ladder companies. There is also a fire alarm corps. The fire alarm system is the Gamewell automatic, which the Chief referred to in one of his reports as a "village system." He is very anxious to obtain an up-to-date and complete manual system for the city, which has a population of about 130,000. Council voted to award the contract for such a system in May, 1909, but after some litigation the contract was declared illegal by the courts because of

some irregularities in the specifications. It is hoped that a new contract may be let within a short time.

The paid department was established in 1877 and has therefore seen about 33 years of service. The numbers of fires and money losses by five-year periods since then have been; 1877-1881, 487 fires, \$842,382 loss; 1882-1886, 644 fires, \$685,906 loss; 1887-1891, 939 fires, \$2,311,840 loss; 1892-1896, 1,114 fires, \$982,486 loss; 1897-1901, 1,495 fires, \$1,354,612 loss; 1902-1906, 1,735 fires, \$891,175 loss; 1907-1908, 845 fires and \$669,603 loss. This gives the average number of fires per year for each period as follows: 97, 129, 188, 223, 299, 347 and 422, respectively. The losses per fire have averaged \$1,730, \$1,065, \$2,462, \$882, \$906, \$514 and \$792, respectively for each of the periods named.

A drill school is held at engine house No. 3, at which is located the hospital stable. A large tower has been erected for the purposes of drill, and the ground and second floors of this are occupied by the hospital stable. The instructor at the drill school is Mr. James Harvey. All new men are given thorough instruction in the use of the scaling ladders, life net, and other ordinary appliances; and all hands are put through a drill occasionally. Drills occur daily, and are of great value, both in instructing the men and keeping them in condition.

In addition to the chief and four assistant chiefs there are

employed by the department a stenographer, chief's driver, messenger, medical officer and veterinary surgeon. Each of the ten engine companies has a captain, lieutenant, engineer, stoker and driver; also hose men, varying from three to five in the different companies. Each combination company has a captain, lieutenant and driver, and three hose men, one of them having an additional driver. The water tower company has a captain, driver, tower man and engineer. Each of the hook and ladder companies has a captain, lieutenant, tillerman and driver, and four or five laddermen.

The esteem in which the firemen are held by the citizens of Syracuse is indicated by the fact that a former chief, Philip Eckel, who was killed on June 1, 1886, while going to a fire, has had a statue erected to his memory on North Salina street, one of the main streets of the town. This was erected, not by the city, but by the friends and neighbors of Chief Eckel, his home having been within a short distance of the location of the statue.

The firemen are retired at the age of 65 on half pay, which is paid out of the firemen's pension fund. Also any who desire may retire voluntarily after 20 years of service. A part of the income of this pension fund is from the receipts of the Bureau of Fire from the sale of horses which have outgrown their usefulness in the department and other minor sources of income. The items added to the fund in 1908 consisted of \$7,815.25, foreign insurance tax; \$1,589.21, being 1 per cent of the firemen's salaries; \$139.66, firemen's fines; \$175, gifts and rewards; \$754.81, old property sold; \$700, Harbor Brook bonds, and \$379.75, interest on the same, and \$307.15, interest on cash balance.

The expenses for 1909 (the report for which year is not yet ready) were said by Chief Quigley to be practically the



STATUE ERECTED TO THE MEMORY OF FIRE CHIEF PHILIP ECKEL



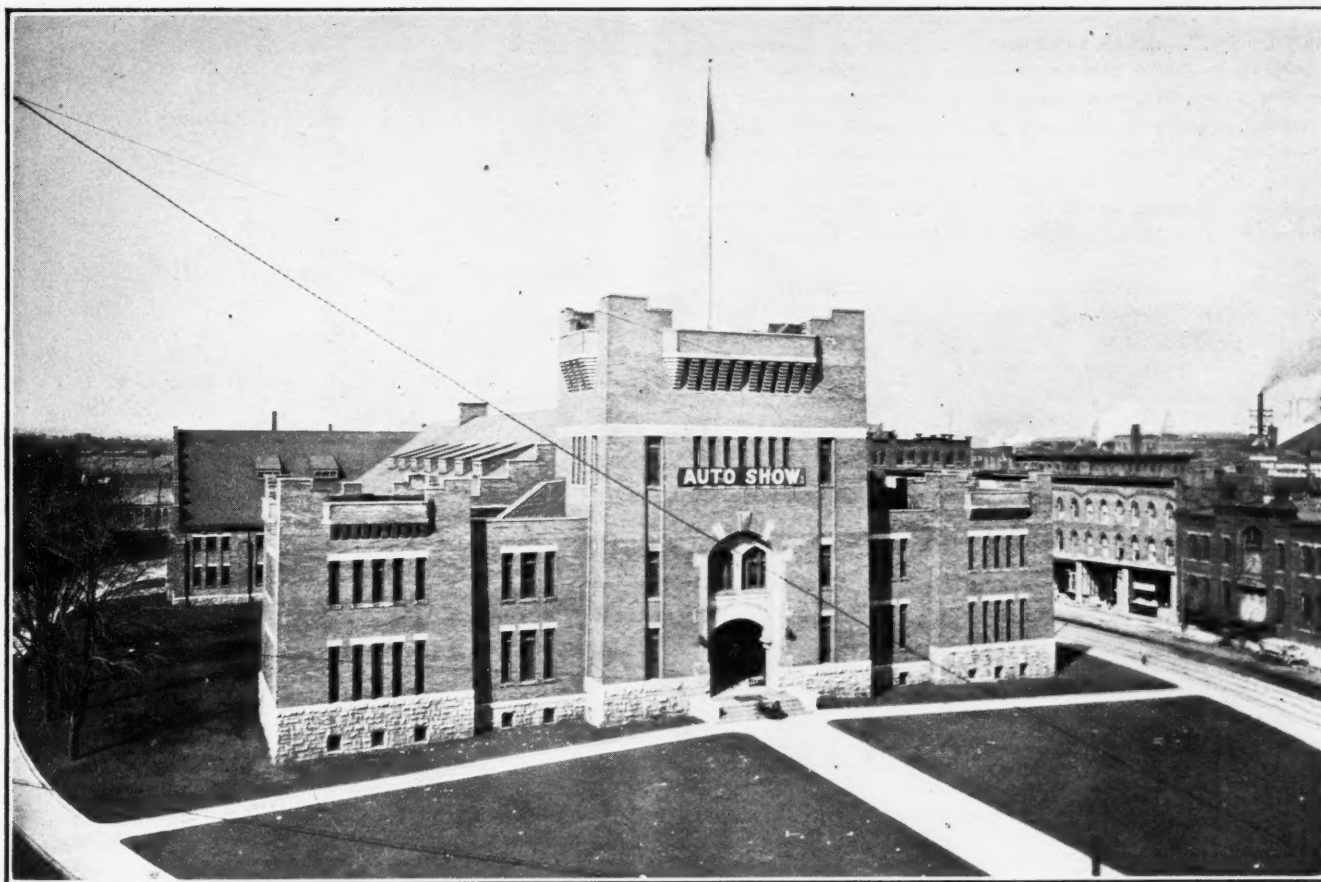
COURT HOUSE, SYRACUSE, WHERE FIRE ENGINEERS' CONVENTION MEETS

same as those for 1908, the principal items of which were as follows:

Purchase of 8 new horses.....	\$1,950.00
Hose	2,016.99
Rent	2,893.33
Cloth	989.36
Hose wagons	780.65
Two exercise wagons.....	310.00
Two wagon pipes.....	700.00
Apparatus	40.00
Apparatus repairs	6,536.31
Miscellaneous expenses	574.62
House repairs	3,716.58
Horse shoeing	3,130.58
Horse feed and bedding.....	11,406.41
Veterinary	649.40
Harness and repairs.....	571.70
Bedding and furniture.....	554.13
Fuel	3,871.83
Surgeon	614.00
Laundry	1,742.64
Supply room	2,099.37
Other supplies	1,173.98
Telephone and telegraph.....	928.35
Fire alarm telegraph.....	1,275.42
Salaries	158,138.76

The items for care of horses totaled to \$15,848.09. As there were 77 horses, this amounts to \$205.82 per horse for the year. During the year five horses were sold at public auction for \$556, and 8 purchased at an expense of \$1,950.

As stated in the Society columns of this and previous issues, the annual convention this year of the International Association of Fire Engineers will meet at Syracuse, August 23 to 26. In connection with this there will be, as usual, an exhibition of fire apparatus. It is believed by Chief Quigley, however, that the exhibition this year will far surpass those of former years, especially in the way of automobile apparatus. At any rate, the city will do its part in providing adequate exhibition space for the largest-sized apparatus which any manufacturer may desire to send. The exhibition will be held in the State armory, the floor space set apart for this purpose having an area of 160 feet by 100 feet, entirely unobstructed by columns or posts; and the head room will be 65 feet in the clear. This excellent exhibition hall is the cavalry drill hall of the State armory. The floor is of tan bark, and thus there will be no necessity for taking expensive precautions against injury of the floor by heavy apparatus. The large apparatus will occupy the center of the hall and the smaller appliances will be shown on tables and in booths ranged along the side walls. Tests of the apparatus will be made just outside of the armory, where abundance of water will be available. The headquarters of the convention will be at the New Onondaga Hotel.



NEW STATE ARMORY AT SYRACUSE, N. Y., WHERE INTERNATIONAL FIRE ENGINEERS WILL HOLD EXHIBIT

SOME FIRE DEPARTMENT STATISTICS

In 158 Cities—Value of Department Property—Expenses—
Men in Service, Total and Per Capita—Salaries—Number
of Alarms—Equipment—Hose Per Capita

THE following figures concerning Fire Departments are taken from the latest report of the Census Bureau giving statistics of all cities of more than 30,000 population in the United States. These show that at the time of the census the properties owned by the fire departments in the United States had a total value of \$70,284,861; \$35,877,034, or a little more than one-half of the total valuation, being the value of fire property in the 15 largest cities of the country, and 22 per cent of the total value being found in the 29 cities having a population of from 100,000 to 300,000.

The payments made in connection with the fire departments are divided by the Census Bureau into two classes; "outlays," which comprise accrued costs of lands and other properties more or less permanent in character; and "expenses," which include the cost of services, rents, and materials which are not permanent in character, and also depreciation of permanent properties. Under the first head, payments were made by the departments of all cities totaling \$4,299,839, and the expenses totaled \$37,783,113.

The 15 largest cities paid for outlays \$2,205,180 and for expenses \$22,144,211; and the 29 next largest cities spent for outlays \$957,431 and for expenses \$7,265,201. The per capita expenses averaged \$1.69 in the 15 largest cities, \$1.60 in those of from 100,000 to 300,000 population, \$1.48 in those from 50,000 to 100,000; \$1.34 in those having from 30,000 to 50,000 population; the average of all the cities being \$1.61. The highest per capita expenses were those for Utica, N. Y.—\$2.99, and the lowest 40 cts., at Newport, Ky.

The expenses have been increasing gradually in all sections of the country. In the 15 largest cities there was a gradual increase from \$1.38 in 1902 to \$1.69 in 1907. In the cities of from 100,000 to 300,000 population there was a steady increase

from \$1.33 in 1903 to \$1.60 in 1907. In the cities of from 50,000 to 100,000 population there was a continuous increase from \$1.19 in 1902 to \$1.48 in 1907; and in the cities from 30,000 to 50,000 there was a continuous increase from \$1.04 in 1902 to \$1.35 in 1907.

The men employed by the fire departments in all the cities totaled 29,055, of which 14,465 were in the 15 largest cities. Of the total, 24,422 were regulars, 13,256 of these being in the 15 largest cities; 2,535 were call men, of which 1,481 were in the cities of from 50,000 to 100,000 population; 823 were substitutes, supernumeraries, etc. and 1,275 were miscellaneous employees. This does not include volunteer fire companies, of which there were 199, having 17,519 members, or about 90 members to each organization. The number of regular firemen per 10,000 inhabitants averaged 10.4 in all the cities, nearly the same average holding with each of the population groups. The highest rate was at Atlantic City, N. J., 31.8 per 10,000, and the next highest at Birmingham, Ala., 22.5 per 10,000. The lowest number was at Reading, Pa., 0.3 per 10,000, although Harrisburg, Pa. with 0.4 was a close second.

The number of firemen per 1,000 acres of land area averaged 11.3 for all the cities, varying from 16.0 for the largest to 6.8 for the smallest population group. The number per 100 miles of improved streets varied from 134.5 in the largest cities to 98.1 in the smallest cities, the average for all cities being 118.2.

The salary of the highest officer in the department averaged \$4,307 in the largest cities and gradually decreased to \$1,460, the average for the smallest cities; the average for the entire country being \$2,076. The highest salary is that paid in New York City, \$7,000. The lowest is that paid in York, Pa., \$200.

The total number of alarms during the year in question in all the cities was 101,795, of which 92,961 were first alarms, 1,049 second alarms and 380 third and subsequent alarms. Of these, 45,534 were in the 15 largest cities. The total number of fires was 90,655, 42,157 being in the 15 largest cities. Of these fires 26,460 were without appreciable loss. The total property loss from fires was \$54,120,614, on which there was paid in insurance \$42,714,112.

The equipment of the various departments in all the cities included 491 steam fire engines of the first size, 660 of the second size, 453 of the third size and 172 other sizes. Also 30 fire boats, 61 water towers, 664 combination hose and chemical, 1,830 hose reels and wagons, 94 combination ladder trucks and chemicals, 763 ladder trucks having a total length of 237,436 feet of ladders, 274 chemical engines, and 4,599 hand chemical fire extinguishers. There were in service by the departments 11,855 horses. The cities of the largest size possessed more steam engines of the first size than of any other one size; all the cities smaller than these showed a total for each group of more engines of the second size than of any other. Twenty-seven of the 30 fire boats were owned by the 15 largest cities, and 52 of the 61 water towers were owned by the 44 largest cities.

The length of hose per capita averaged 0.196 feet for all the cities. The average for the 15 largest cities was .154 feet per capita; for those from 100,000 to 300,000 population the average was .213 feet per capita; for those of from 50,000 to 100,000 population the average was .263 per capita and for the smallest cities the average was .296 per capita. The lowest amount per capita was that possessed by Newport, Ky.—.078 feet per capita. Among the other low amounts were .103 in Cleveland, O., and .111 in Scranton, Pa. Among the largest amounts of hose per capita were Atlantic City, N. J., .675 feet; Evansville, Ind., .536 feet; and Portland, Ore., .451 feet.

TRACK CROSSING FOR FIRE HOSE

AN inconvenience to the general public is often occasioned in connection with fires by the delay to trolley service caused by fire hose lying across the tracks and thus holding up traffic for longer or shorter periods. The Boston Fire Department has recently adopted a contrivance for permitting the laying of hose across street railway tracks without stopping traffic. A section of track is built up of two rails held in relative position by tie bars, the two rails being beveled off at each end to practically a chisel edge, and being held apart at the regular track gage. At the center of each rail is an opening through the flange sufficiently large enough to allow the rail to be dropped over a 2½-inch fire hose. When this contrivance is in position, each of the rails resting directly on one of the permanent rails, cars coming along the track will pass up one incline, over the hose, and down the other incline on to the main track again.



FOR CARRYING HOSE ACROSS STREET RAILWAY TRACKS

This contrivance, of course, would not be used to permit cars to pass through the fire zone, or where there would be danger; but in case of a big fire, hydrants are frequently used outside of the danger zone and in such localities where the hose crosses a trolley track, the device described has been found very useful in avoiding serious traffic blockades.

AUTO VS. HORSE-DRAWN APPARATUS

Conclusion by New York Officials from Experience in That City—Comparisons of Costs—Specifications for New Auto Apparatus Soon to Be Purchased.

ONE year's experience with a piece of auto fire-fighting apparatus has convinced the Fire Department officials of New York City of the serviceability of this type of machine, and the prospects are that before a great many years a horse-drawn piece of fire apparatus will be a rarity in the city. Commissioner Rhinelander Waldo is now advertising for six auto high-pressure hose carts, similar to the one now in use, an 85-foot hook-and-ladder truck with couple gearing, a gasoline pumping and propelled engine, and a steam pumping engine, propelled by gasoline, and these will be placed in service as soon as possible down in the congested district where the fire-fighting is hardest.

It is expected that 15 or more automobile manufacturers and others will compete for the new apparatus under the specifications as drawn up by the Fire Department. They will be called upon to do the work under a moral guarantee, and no bidder will be eligible who has made less than twenty-five chassis.

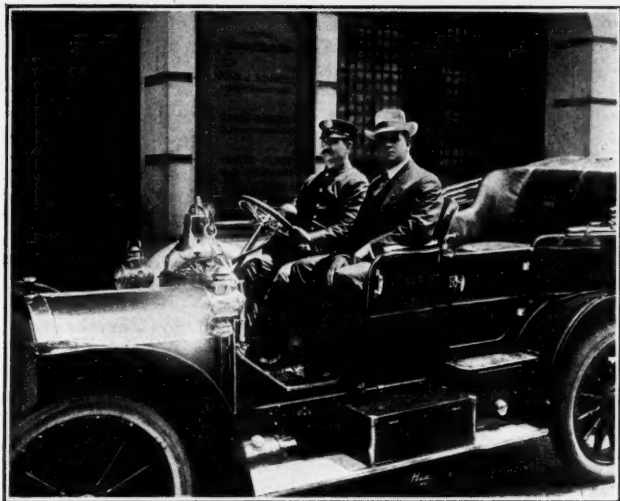
The big red high-power machine of Fire Chief Edward F. Croker has been a familiar sight on the streets of New York for many months, dashing from one end of the Greater City to the other, while Deputy Chief Binns, who has charge of the Brooklyn and Coney Island districts, has also made continuous use of his automobile in covering his mammoth jurisdiction. It was not, however, until the administration of Mayor Gaynor had gotten well under way, that it was deemed expedient to go extensively into the purchase of these cars; but now each Division Chief, in charge of each of the four boroughs, possesses one, the last having been put into service during the past week.

At the time the high-pressure auto hose cart was purchased, a year ago, the department also purchased six horse-drawn carts for use in the high-pressure zone, and the auto cart has demonstrated its superiority over these in many different ways. In the first place, as Fire Commissioner Waldo pointed out a few days ago, it rates as 100 per cent., notwithstanding a hard year of usage, being as good as when it was received. It carries forty-five lengths of 50-foot hose, responds to an alarm at a rate of 30 or 35 miles an hour, and can travel 25 miles or more through the snow in the winter months. On the other hand it is a difficult task for three horses to carry forty lengths of hose, much slower time is made, and in addition allowance must be made for shoeing, forage, medical attention, etc.

Automobile apparatus is looked upon as the ideal thing for fire service for many reasons. Commissioner Waldo is of the opinion that the cost for maintenance will be comparatively little, and he says there is no reason why the machine should deteriorate to any great extent. The average run in the city is about a mile for an alarm and the machines are kept within doors when not in active service. There is one fire company which makes 1,500 or 1,600 runs per year, but this is far above the average, many of them not making half this number; so that the average mileage made in a year would be approximately 2,000—much less than most private automobiles make. Besides, in covering their territory they are not subject to the hard jarring of rough roads, the smooth city pavement being quite a factor in avoiding wear and tear.

Besides this the safety factor is one to be considered, especially in the crowded streets of New York. The motor apparatus can be driven at an absolutely reliable speed and it can be checked up within the length of the apparatus; while the horse-drawn apparatus cannot be checked up under 150 feet.

The high-pressure hose cart was purchased from the Knox Company for \$6,700, and has been in active service continuously, with the exception of a few days when it was turned over to the manufacturers for a thorough inspection and slight repairs.



CHIEF CROKER IN HIS AUTOMOBILE
Engineer Rankin at the Wheel

The other high-pressure apparatus, which are drawn by three horses, cost \$995 each, with \$250 additional for the nozzle, which is placed just behind the seat and has the appearance of a small water tower. It is figured that the wear and tear on the three horses amounts to about \$175 per year and their upkeep \$700 additional, against \$50 or \$75 for gasoline for the motor cart.

There are 1,550 horses used by the New York Fire Department, which cost, on an average, \$342 per head, and the average period of usefulness is five years. They bring a comparatively small price at auction. The average life of a steam fire engine is fifteen years and they cost \$5,000 or \$6,000. Each of them carries a five-year guarantee.

The department is also to place in service in a short time a gasoline type of engine, horse-drawn, which was ordered by Fire Commissioner Nicholas J. Hayes. It is expected to deliver 600 gallons of water a minute. Some of the big steam

fire engines deliver as much as 1,000 gallons per minute when first placed in service, but they do not keep up to this record and the amount varies.

The official figures of the department, kindly furnished by Commissioner Waldo and Chief Guerin, are as follows:

The amount of forage allowed for each horse, based upon several years' experience, and the amounts appropriated, are:

Forage used in 12 mos.	Lbs.	Cost per 100 lbs.	Total cost
Hay	4380	\$1.20	\$52.56
Straw	1095	.95	10.40
Oats	4015	1.65	66.25
Bran	348	1.40	4.87
Oil meal	36	2.00	.72
Salt	24	.75	.18

Total for feed per horse for one year..... \$134.98
Shoeing, with pads, costs \$5.50 per month, or \$66 per year.
The cost of both is therefore \$200.98; and the cost of the three horses for an engine would be \$602.94.

Comparative First Costs (Including one year's maintenance)	
Horse Apparatus	Automobile Engine No. 72
Cost of three horses, average \$342 each	High pressure hose wagon, first cost, including one year's maintenance
Cost of cart.....	7 barrels of gasoline, @ \$10.50
Harness	(The best 74-76 proof gasoline is used.)
Ceiling Springs, 3 at \$16..	
Incidentals	
One year's maintenance, as above	
Total, including maintenance for one year.....	Total, including one year's maintenance

\$1026 \$6,700
\$995 \$73.50
\$40
\$48
\$12
\$603
\$2,724 \$6,773.50

Battalion Chief's Wagon	
Horse Drawn	Automobile
First cost of wagon.....	An auto car for this purpose can be purchased for \$900 to \$1,000, guaranteed for the first year. The maintenance would be merely nominal.
Two horses	
Two sets of harness.....	
Total cost	
Maintenance of horses....	
First cost and maintenance for one year.....	

\$350 \$684 \$70 \$1104 \$528 \$1632

AUTO HOSE WAGON SPECIFICATIONS

Below are given the specifications prepared by the New York Fire Department for auto hose wagons for which bids are now being invited. Five wagons are asked for according to these specifications; also one smaller wagon which differs from the ones specified in the following respects: The body is



HIGH PRESSURE AUTOMOBILE HOSE CART, MANHATTAN, NEW YORK

12 feet by 48 inches by 22 inches instead of 12 feet 6 inches by 63 inches by 28 inches. Only one partition in the body, 24 inches high, instead of two partitions 28 inches high. Shelves to carry four nozzles on each side, instead of nine. One instead of two six-pound axes, and a 7-foot plaster hook, which is not included in the equipment for the larger wagons. The tires are 4 inches wide on the forewheels and $3\frac{1}{2}$ on the rear wheels, instead of 5 inches on each, as specified below. The springs are $2\frac{1}{2}$ inches wide, instead of 3 inches, and able to support the full load of 4,000 pounds, instead of 6,000; the motor being made correspondingly less powerful. The search light is to be 8 inches, instead of 10 inches, and sufficient gas to be carried for 20 hours supply, rather than 40 hours.

The department is asking for bids at the same time on a 75-foot aerial hook and ladder truck of self-propelling design; a gasoline propelled and pumping engine in combination with hose wagon, and two $1\frac{1}{2}$ -ton motor trucks.

SPECIFICATIONS FOR FURNISHING AND DELIVERING FIVE AUTOMOBILE HOSE WAGONS FOR USE OF THE FIRE DEPARTMENT, CITY OF NEW YORK.

No bid will be considered from any contractor who has not manufactured and had in operation at least 25 chassis with the type of engine, transmission, ignition and lubricating systems, which it is proposed to furnish under these specifications:

Body.—The dimensions of body shall be 12 feet 6 inches long by 63 inches wide by 28 inches high inside measurements and shall be made by using suitable angle steel for framework and No. 12 B. & S. gauge sheet steel panels front and side; floor of body to be made of slats and of straight-grained, second-growth sound ash, with a space between each slat sufficient to allow a free circulation of air. There shall be two partitions of No. 10 B. & S. gauge sheet steel 28 inches high extending full length of body, with corners rounded, making three compartments for hose 21 inches on centers of partitions. These partitions shall be properly braced with half oval knee irons so as to hold same secure, all work to be made in a neat, smooth manner, with close joints, and all braces or all parts of body that have a bearing on wood or steel shall be covered with pure white lead before being put together. Panels, angle steel, etc., to be riveted with hot rivets. The interior finish of body shall be such as to leave no sharp corners or projections that would be injurious to hose. This body shall be known as a steel body, except the flooring, and all parts must be of sufficient size and strength to perform the services required. Style to be the same as automobile hose wagon now in service.

Running Board, Etc.—Running boards, guards, mud fenders, rear step and general finish to be the same as that of body of high-pressure automobile hose wagon now in service.

Tool Box.—There shall be one large tool box made of fine-grained, well-seasoned, sound ash placed at the rear of rear wheels and shall extend across the full width of body, and shall be as large otherwise as space will permit, and shall have a door on each end as large as box will permit, doors to be hinged so as to swing to the front when opened, to have nickel-plated brass lock equal to sample. There shall be one small tool box made of fine-grained, well-seasoned, sound ash, top cover to be hinged to open to the front, this cover to be covered with corrugated rubber matting equal to Fire Department sample, cover to have nickel-plated brass lock, equal to sample; this tool box to be fastened in center on rear step, similar to box on automobile hose wagon now in service.

Turret Pipe.—There shall be a turret pipe in center of body close to the back of pilot's seat and strongly braced. There shall be two 2-way, 3-inch Fire Department regulation Siamese connections, one placed on each side under body, to have a slight angle downward so the hose can be easily attached. There shall be a branch "Y" $3\frac{1}{2}$ inches by $4\frac{1}{2}$ inches, to which the Siamese connection shall be connected. There shall be a $4\frac{1}{2}$ -inch wrought iron pipe connecting turret pipe with branch "Y," and the use of elbows in this pipe is prohibited, but in lieu thereof, the pipe shall be bent so as to give the water the least possible resistance. The distance from the floor of body to the tip of turret nozzle when in a vertical position shall be 8 feet. There shall be furnished with turret pipe two nozzles, one $1\frac{3}{4}$ -inch and one 2-inch. There shall also be two shelves, one on each side near rear of body, sufficient to carry nine New York Fire Department standard 3-inch nozzles on each shelf, and to have nine hardwood nozzle holders bolted on each shelf.

Railings.—Seat railings to be brass and nickel-plated and to be 8 inches high and properly supported with stanchions; railings to be made of brass pipe, $\frac{3}{4}$ -inch outside diameter. Hand rail to extend along each side of body and shall be 8 inches above the sides and to extend to and end on top of rear

step, and to have four brass nickel-plated stanchions on each side upward from side of wagon. There shall be a hand railing in center of wagon about 3 feet 6 inches above the side of wagon to be made of 1-inch brass pipe, nickel-plated. This railing to be supported by brackets of wrought iron extending upward from the two partition boards in the wagon and to be as close to the turret pipe as possible, but not to interfere with the proper movement of same, and to extend to the rear of wagon; the two front stanchions to have a curve backward to meet the brass railings, which must be parallel. The front end of railing is to have a cradle with a leather strap riveted to same for the purpose of holding the turret nozzle, which shall rest in a horizontal position in said cradle. There shall be suitable mounting handles nickel-plated, one on either side of pilot's seat.

Pilot's Seat.—Mounted in front, large enough to accommodate two men, style same as on automobile hose wagon now in service, with leather cushions upholstered with best quality curled hair.

Equipment.—There shall be furnished for use on each wagon two nickel-plated Fire Department regulation hand lanterns, to be carried in lantern brackets, one on either side of wagon as near the front as possible; two six-pound steel edge axes to be carried in nickel-plated axe holder, one on each side of wagon over the hind wheel, and crowbar to be carried in holder fastened to rear step.

Cover.—Tarpaulin or hose cover of proper size to cover all the hose in each compartment shall be furnished, so made as to fasten at front of wagon under pilot's seat, snaps to be on tarpaulin.

Bell.—The car is to be equipped with the regulation Fire Department bell 12 inches in diameter, placed on left hand side of pilot's seat on stanchions, the stanchions to be on an angle at the back of pilot's seat and of a proper height to allow a clear, free sound, made so it will revolve; to have handles attached to the bow of bell, with a knob for bell cord, bell to be the regulation locomotive pattern, made of the best bell metal and of a high silvery tone, the bell and stanchions to be nickel-plated.

Chassis.—Frames of solid rolled channel steel, of ample dimensions for hard service, frames to be braced and riveted in a first-class workmanlike manner. Radiator to be protected by guards attached to and forming part of the frame.

Wheels.—Wheels to be 36 inches in diameter, made of the best selected hickory, artillery type, with steel channels for tires. Two extra front and two extra rear wheels, fully finished and tired, are to be furnished by the contractor.

Tires.—To be of side wire type, 5 inches wide on forward wheels and 5 inches wide dual on rear wheels and shall be equal to Fire Department sample.

Axles.—Axles to be made of best steel and suitable size for load carried and service required.

Springs.—Springs to be at least 3 inches in width, made of the best spring steel and sufficiently strong to properly carry the load.

Brakes.—To be equipped with extra strong foot and emergency brakes, powerful enough to hold the apparatus on any grade up to 25 per cent. This means that each individual brake on the apparatus must be able to hold the entire apparatus with a full load of not less than 6,000 pounds on said 25 per cent grade, and the said brakes to be operated by pilot on seat of apparatus.

Wheel Base and Tread.—Wheel base shall not be less than 144 inches, tread to be the same as automobile hose wagon now in service.

Steering Wheel and Operating Levers.—Steering wheel and operating levers to be placed within convenient reach of pilot.

Transmission.—Transmission to be of the selective or sliding gear type, with at least three speeds forward and one reverse. Drive is to be by means of chains working sprockets on rear wheels.

Lubrication.—All moving parts to have ample and modern facilities for lubricating.

Motor.—The motor shall be a four-cylinder, four-cycle type of sufficient horsepower to develop and maintain a speed of thirty miles an hour on the highest gear for one hour through the streets of the City of New York, with a load of 6,000 pounds.

Ignition.—A primary and a secondary ignition system shall be provided. The primary ignition system to be furnished by a magneto, the secondary system to be furnished by storage batteries.

Speedometer.—Speedometer to work on the electric magnetic principle, with a recording capacity of 60 miles per hour.

Light.—One 10-inch gas searchlight is to be furnished with each apparatus, to be placed on top of dash, supplied by gas tank of 40 cubic feet gas capacity sufficient to supply gas for forty hours to a one-half foot burner.

Automobile Equipment.—There shall be furnished with each apparatus a full set of wrenches and tools for making all ordinary repairs and adjustments, including:

Two extra sets of spark plugs.
Two reflecting oil lamps, showing red lights ahead, to be placed in front.

One Siren horn, connected with motor mechanism, so as to be operated by pressure of pilot's foot.

Guarantee.—The contractor shall guarantee that for a period of two years the apparatus shall at all times show a working efficiency of at least 75 per cent of the efficiency specified in this contract; that all repairs and adjustments except such as may be rendered necessary by reason of accident (other than breaking of machinery or parts thereof), or neglect or carelessness on the part of the members of the Fire Department, shall be made by the contractor at his own expense. If the apparatus shall be out of service for the purpose of making repairs and adjustments other than those caused by accident (other than breaking of machinery or parts thereof), or neglect, or carelessness on the part of members of the Fire Department, for a period greater than fifty days in any one calendar year, the apparatus shall be rejected from the service of the Fire Department and returned to the contractor, who, within thirty days from said rejection, shall remit to the Comptroller of the City of New York the full amount received by him in payment for said apparatus in accordance with the terms of this contract and bond.

Bond.—The bond shall be for the full amount of the contract.

TRAINING SCHOOL FOR PATERSON

MAYOR ANDREW F. MCBRIDE of Paterson, N. J., has recommended to the Fire Commissioners that a training school for firemen be established in that city. With this end in view and for the purpose of obtaining the necessary instruction he has arranged with Commissioner Waldo of New York City to have a number of men from the Paterson Department trained in the

New York school. Commissioner Waldo stated that classes are formed for instructing firemen whenever new men are taken into the service. The mayor recommended that the Board detail two captains, two lieutenants and two firemen to the New York department for the purpose of putting them through a thorough course of instruction in such a class, and that, in addition thereto, they be assigned to some of the busy fire companies of Manhattan for practical experience and observation of the methods employed by that department.

Upon the return of the men from New York they will be placed in charge of a training school in Paterson. The Mayor would have it mandatory for one or more companies to train daily and that all be examined each month to learn the physical fitness of the individual firemen, their ability to raise and scale ladders, couple hose, operate water towers and perform other work of the department.

Such a training school, the Mayor believes (and experience elsewhere seems to bear him out in this), would not only give knowledge of and practice in methods of using the apparatus, but would also serve to keep the men in good physical condition, would occupy a part of the leisure time which, in some cities where fires are few, is so poorly occupied by some of the men as to lead to unfavorable comment; and would also probably lead to a better enforcement of discipline in the department.

SPRINGFIELD FIRE DEPARTMENT

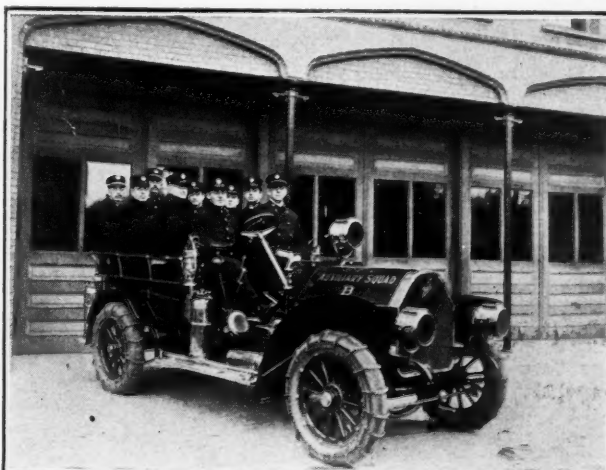
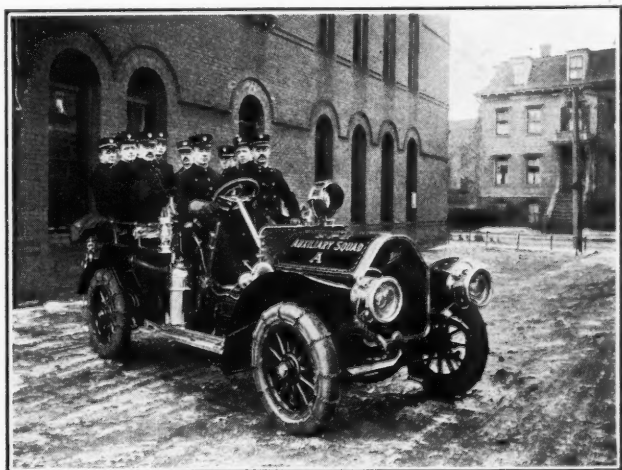
Automobile Apparatus Used for Four Years—Maintenance Cost Much Less than of Horse Drawn—Equipment of the Several Stations—Living Quarters Homelike—New Station for Automobiles

FOUR years of experience in the use of automobiles in the Fire Department have convinced the authorities of Springfield, Mass., that motor-propelled apparatus will best meet their needs in the future. In reaching this conclusion consideration has been had of an important change in the water supply. Within the past year, owing to extensive water works construction, the water pressure has been increased until now it is 130 pounds per square inch in the lower and business portions of the city, while in the residential section, mostly on the hills, there are few places where it is less than 80 pounds. This almost eliminates the question of steam fire engines and makes the automobile combination chemical and hose wagon the principal piece of apparatus. New houses are in the course of construction and new apparatus has been ordered with a recognition of these conditions.

The argument for the automobile apparatus is based on grounds of economy and efficiency. There are now in service in Springfield three principal pieces of motor apparatus—two squad wagons and a combination chemical and hose wagon. The

two squad wagons have a complement of eight men each. The alternative proposition under consideration at the time of their selection was an increase in the force of sixty men. The results are believed to show that the sixteen men have strengthened the department just as much as sixty would have done. This is more or less a matter of opinion, of course, but the responsible officials can point, in support of their view, to a very small fire loss and also to specific instances of good work. The fire losses since 1904 have been as follows: 1905, \$208,451; 1906, \$105,771; 1907, \$535,549; 1908, \$88,690; 1909, \$75,701. The numbers of alarms during the same time have been as follows: 1905, 424; 1906, 403; 1907, 498; 1908, 530; 1909, 675. The Fire Department officials speak of their record as to fire losses with all due modesty, knowing that is not a perfect measure of efficiency and that it is possible at any time for a single fire to increase the loss greatly. However, the figures are of value and they are very satisfactory.

The cost of maintenance of the motor apparatus has proved to be much less than that of horse drawn apparatus. The cost



WAGONS OF AUXILIARY SQUADS A AND B, SPRINGFIELD, MASS.

of maintenance of the combination hose and chemical from August 26, 1908, to June 26, 1910, may be cited as a case in point. This cost was as follows:

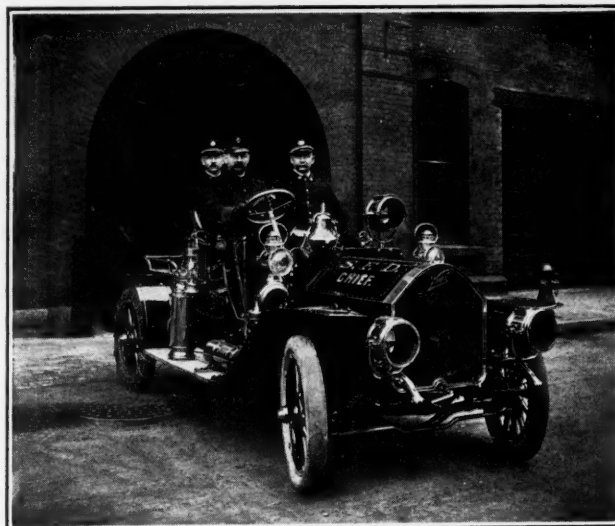
167 gallons gasoline.....	\$24.05
4½ gallons lubricating oil	1.70
Tire expense, including 3 new tires.....	160.00
Repairs to batteries, etc.....	22.61

Total \$208.36

This sum is to be compared with the ordinary cost of feeding and shoeing a team, which in Springfield amounts to \$480 a team a year. During this time the apparatus made 265 runs and traveled 272 miles.

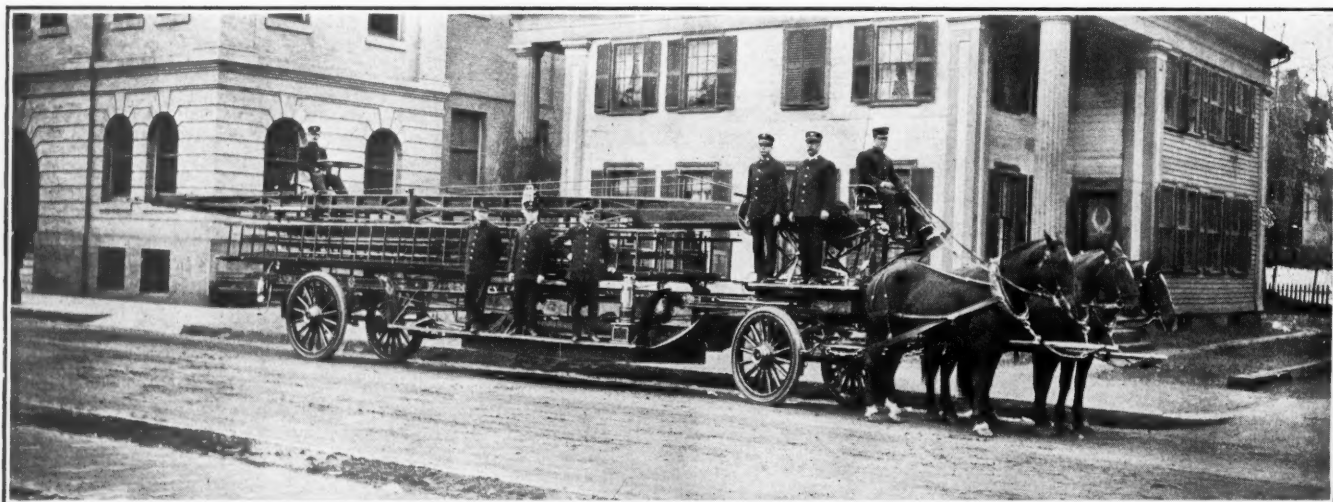
The record of the Squad A wagon during the past year was as follows: Number of alarms answered, 303; mileage, on alarms, 560; miscellaneous, 278; total 838; amount of gasoline consumed, 215 gallons; lubricating oil, 7 gallons; average, 3.9 miles per gallon of gasoline and 119.4 miles to a gallon of oil. The cost of maintenance for the year, including three new cases and tubes, Siro carburetor, and parts replaced by new, \$310.51.

The efficiency of the motor apparatus in getting to a fire quickly, even if miles away, is too well known to need mention. One instance may be cited. Indian Orchard is a section of Springfield over six miles from the center of the city, practically disconnected from it and so far as fire fighting facilities are concerned is managed almost independently. During the past



CHIEF W. H. DAGGETT IN HIS AUTOMOBILE

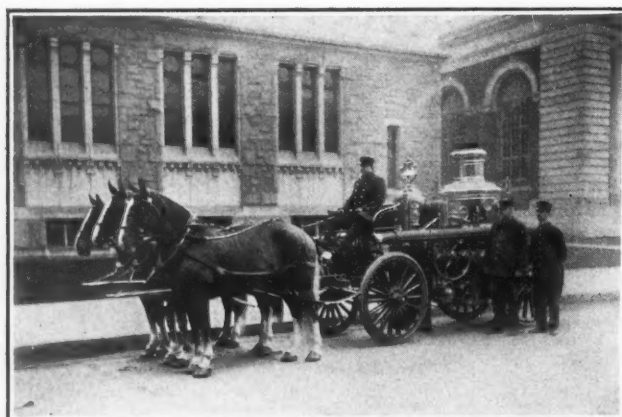
and headquarters is on Pyncheon street, near the business center of the city. Here are the headquarters of Chief Engineer W. H. Daggett and First Assistant Chief E. A. Kimball. The assistant chief's car is stationed here day and night and the chief's car in the day time only. These cars carry two three-gallon extinguishers, two axes and two lanterns. A car used



AERIAL TRUCK, STATIONED AT CENTRAL FIRE HOUSE

year a fire occurred in a factory there which threatened to become serious. An automobile apparatus got to the scene in less than fifteen minutes and rendered efficient service.

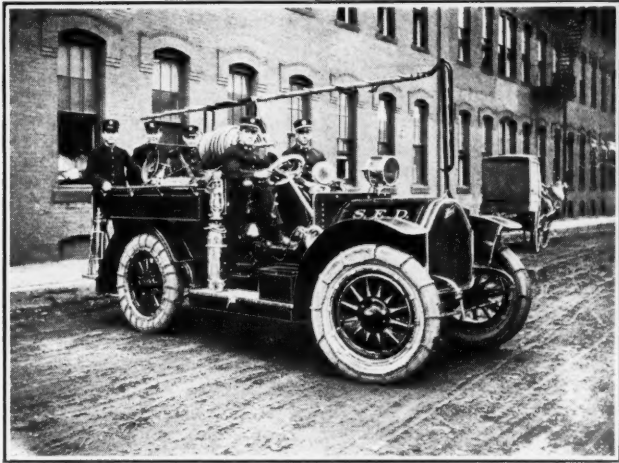
Bearing in mind the fact that the Springfield Fire Department is in a state of transition, before considering the plans for its future organization and equipment a glance at its present main features is instructive. The present central station



ENGINE NO. 1, WITH FINELY MATCHED TEAM

by the superintendent of the fire alarm telegraph and a construction wagon used by the same branch of the service are also kept here. Nineteen men are connected with the central station. The station contains a No. 1 engine now held in reserve. This engine was formerly drawn by three almost perfectly matched horses, which was considered as the handsomest team in the State. The engine is fitted up so that if needed an automobile apparatus, generally a squad wagon, can go after it, hitch it on behind and draw it to the fire. A champion water tower, also stationed here, can be drawn in the same way. Hook and ladder No. 1, in regular service, drawn by three horses is an 85-foot Seagrave aerial ladder, with Firestone solid side wire tires. Some day this ladder may be motorized. A straight chemical wagon with two 50-gallon tanks, and the only hose wagon in the city not having chemical tanks, complete the equipment.

The Chestnut street station contains no horse-drawn apparatus and houses auxiliary squad A wagon, and No. 7, the automobile combination chemical and hose wagon. The Squad A wagon, the first of the larger automobile apparatus to be acquired, was made by the Knox Automobile Company. The car has a four-cylinder, 40-horsepower motor, and is air-cooled. The chassis is of pressed steel. The wheels are 38 inches in diameter, with 5-inch Fisk tires; 117-inch wheel-base; screw and nut steering; chain drive; motors H. & G. model; skid



AUTO COMBINATION HOSE AND CHEMICAL

chains are generally worn on all tires. The car carries the driver and Assistant Chief J. R. Graves on the front seat and three men on each of the side seats. The equipment consists of two 3-gallon extinguishers, two play pipes, two lanterns, two axes, a door opener, claw bar, life belts, life gun and rope. The total weight as driven to fires is 5,050 pounds.

The combination hose and chemical is of very similar construction, but larger, the wheel-base being 128 inches, and the engine being 40-horsepower, 4-cylinder, 4-cycle motor. The tires are 6-in. by 40-in. Fisk, pneumatic, bolted on, removable rims. The equipment consists of 1,000 feet of $2\frac{1}{2}$ -inch hose, one 35-gallon chemical tank and reel; 200 feet of $\frac{3}{4}$ -inch chemical hose, one 3-gallon extinguisher; and the usual full hose wagon equipment. The wagon ordinarily carries the driver and captain on the front seats and three men on the rear step. The pompiers ladder, carried on standards across the top of the car, is 14 feet in length. A Hart play pipe with Callahan shut-off nozzle is also carried. The weight of this wagon loaded is 7,000 pounds.

The Chestnut street station is interesting as showing the improvement in housing conditions brought about by the doing away with horses and the utilization of the space formerly given to storage of feed, in which shower baths have been installed and separate rooms have been built for the men—much to their comfort and satisfaction. The equipment of the training school is kept here also. Under the instruction of Captain A. H. Strong, a graduate of the New York training school, a squad of twelve men are drilled here in the morning and another of the same size in the afternoon. The use of the auxiliary squads has made it necessary that each member should be able to fill a place at any equipment in the department. Therefore, at the training school not only are new men broken in but the general policy of teaching every man to fill any place is carried out.

The Walnut street station contains the Auxiliary Squad B wagon, Second Assistant Chief Burton Steere (who by the way is president of the Massachusetts State Firemen's Association), commanding; second size Metropolitan steam fire engine and a combination hose and chemical wagon. The Squad B wagon is also a Knox, similar in general construction to the A wagon; it has a 117-inch wheelbase, but the body is longer and it weighs with men, as driven to fires, 200 pounds more. Four 3-gallon extinguishers are carried instead of two, as on the car first put in commission. The minor equipment is the same. A Browder life net is also carried. A searchlight is carried over the dashboard and all lights are lit by electricity. Eight men are attached to this squad, making seven available at all times. The elimination of horses is not complete at this station; in fact, Assistant Chief Steere has charge of all horses in the department. However, some space has been made available for better housing conditions and most of the men have separate rooms, and shower baths have been installed.

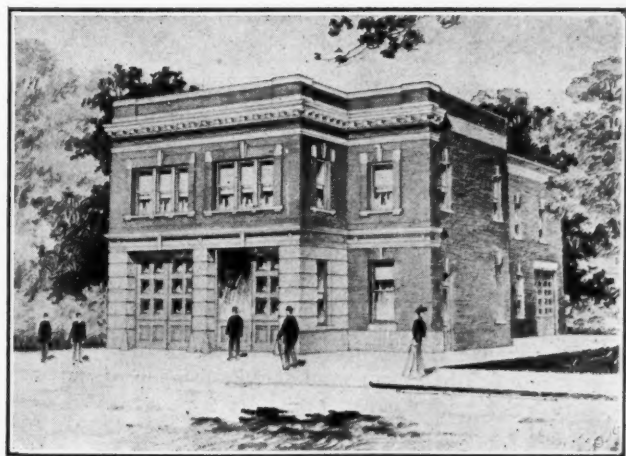
The Winchester street station has all horse-drawn equipment, namely, an engine, a combination hose and chemical, and an

aerial ladder. This house is well up to date in respect to housing. An appropriation of \$3,600 made it possible to install shower baths and to build separate rooms for the men and now all are taken care of in this way. This makes the living quarters much different from an ordinary engine house. Individual taste in decoration is given full play and many of the rooms are more than comfortable, they are home-like and attractive, some of them with their cushions, pictures and pipes suggesting students' rooms in a college dormitory. Chief Dagget states that the change is very desirable. There is no conflict of opinion about heat, light and ventilation, as each man may suit himself. Any man wishing to retire early or stay in his room and read may do so. There is no general living room with its table and greasy packs of cards suggesting a bar-room with the bar inadvertently omitted, a scene so common in engine houses.

Other fire stations and their equipment are as follows: Armory street: Engine, combination hose wagon. Hooker street: Combination wagon, city service ladder truck, trolley transportation car. This car has been used only a few times—once to carry aid to Holyoke and the other times to send apparatus to the Indian Orchard section. Mill street: Engine, combination hose and chemical and a Seagrave city ladder truck. Plainfield street: Combination hose and chemical. Bond street: Engine and hose wagon. Pine street: Straight chemical wagon. The chief's car is also housed here at night. Oakland street: Engine and combination chemical with two tanks. Indian Orchard: Engine, combination hose and chemical and a ladder truck. To man all this apparatus requires a total force of 135 permanent and 20 call men.

A new station built exclusively for automobile apparatus is approaching completion on Margaret street. It is a two-story brick building, Indiana limestone trimmings. Gasoline will be stored in a tank underground, with ventilating pipes, extending above the roof. It is built to house a combination hose and chemical engine and there will be space on the main floor for the storage of a reserve piece of apparatus. There will be accommodations in separate rooms for 12 men, but only eight will be stationed there. The floors are of concrete and the whole building fireproof. In the rear is a repair shop with a pit to accommodate men when making repairs. Two sleeping rooms for men are on the lower floor. The walls are of glazed white brick up to a height of eight feet. Electric cables will be built in the floors so that current for charging electric batteries or for other purposes may be obtained conveniently.

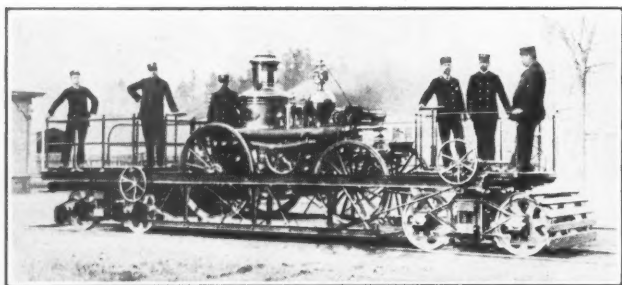
The improvements of the Springfield department, as already decided upon, include the construction of a new central fire station and the addition of four new important pieces of apparatus, an electric driven aerial truck and three auto combination hose and chemical wagons after the general style of No. 7 now in service, but larger, stronger and perhaps electrically driven. The new central station, situated not far from the old one and already in course of construction, will have accommodations for



FIRE HOUSE FOR AUTOMOBILE APPARATUS

eight pieces of fire department equipment. There will be five doors on the front for the use of the apparatus and fire chief's automobile, and two doors on the side for the two wagons used in the telegraph service. There will be on the upper floors the general offices of the department and 30 individual sleeping rooms for the firemen. The pieces of apparatus it is planned to house are the electric motor ladder truck, one of the new combination hose and chemical wagons, a water tower rigged to be attached behind an automobile, a steam engine similarly rigged and two chiefs' wagons. In the basement, besides suitable heating apparatus for the building will be drying closets for the men's clothes.

The running gear of the new automobile truck is being made by the Couple-Gear Freight Wheel Company, of Grand Rapids, Mich. In this device there are electric motors inside of each wheel, the power being supplied by a storage battery. The axle stubs on which the wheel turns are integral with the motor castings. An elongation of the inside stub is keyed in a paper sleeve in the steering knuckle and this holds the motor in a fixed horizontal position while the wheel revolves around it. The force of the motor is applied to the rim of the wheel at two opposite points. High efficiency is claimed for this device, and the truck is guaranteed to have a speed under actual service conditions of 20 miles an hour.



TROLLEY TRANSPORTATION CAR

The new combination wagons will have a much longer wheelbase than the combination wagons and the squad wagons now in use. The wheelbase will be 144 inches. This improvement in design will permit the wagon body to set over the wheels instead of between them, and the body will be both longer and wider. There will be seating capacity for all the men inside. The objection to riding on the step is that the men have no opportunity to change their clothes and if they happen to have their uniforms on when the call comes in they get to the fire in the same condition. Also the men are a little safer inside of the wagon than on the step.

The new building will contain a complete new Gamewell fire alarm telegraph system. The cables for this are already being laid by the fire department's own men, for the most part in underground conduits. The alarm will be rapid striking with all the newest improvements.

CARD CATALOGUES FOR FIRE FIGHTERS

THE *Montreal Daily Witness* has recently published and advocated a method of systematizing and making readily available information collected by the Fire Department or others concerning the conditions of the more important buildings throughout a city as they may affect fire fighting or fire risks. The general idea, which is indicated on the accompanying sketch, is to show pictorially the important features on each floor of the building; symbols being used which will be standardized and thus readily interpreted at a glance. Features which would thus be shown would be the location of stairways, excessive weights, explosives, basements from which there are no exits, elevators, fire escapes, gas and electric light switches and meters, and a number of other features which would readily suggest themselves to firemen as being of importance to know when reaching a burning building.

It is suggested that four copies be made of each of these cards, one to be placed conspicuously near the main entrance of the building illustrated, and one of each of the others to be sent to the Fire Department, building inspector, and factory inspector. The original card would then be filed in a box or drawer of the proper size which could be carried by the district captain under the seat of the buggy or touring car, so that when he arrived at the fire and while the men were raising ladders and connecting up the hose he might in 30 seconds find and glance at the card, and learn at once the important features concerning the interior which might be of the greatest assistance in directing the fight of his men against the flames.

It is further suggested that the index be revised every six months and whenever there is any alteration made in a building.

Water Tank.
10,000 gallons.

1. Hoist
Wheelhouse

2. Trap-door
in Gravel
Roof.

3. 100,000 lbs.
Lead.

4. Linotypes.
\$50,000.

5. Presses.

6. Front Door.
V.S. Printing
material,
\$20,000.

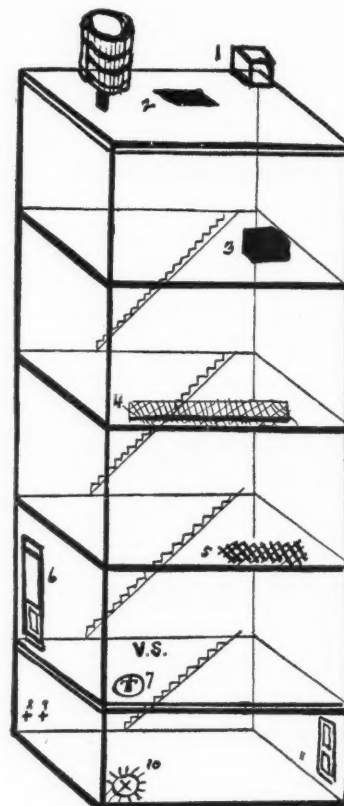
7. Safe (T).

8. Gas Cock.

9. Electric
Switch.

10. Dynamite,
10 lbs.

11. Basement
Door in rear.



SKETCH FOR CARD INDEX

If placed at the main entrance of a building in a small glazed frame with the date of its preparation upon it, it would be open to the inspection of the police force, who could report any delinquency in the semi-annual revision of the plan and would also enable employees to report any deficiencies or inaccuracies in the plan. Very large buildings might require large cards, folded to fit in the box or drawer.

In a small or average size city the preparation of such cards would not be such a staggering task as might at first sight appear, since such cards would not be needed for residences, but only for factories and other large buildings or those with unusual fire risks. The *Witness* suggests a law compelling such cards to be furnished for all buildings where over 20 hands are employed or which are insured for \$50,000 or more.

NEW YORK'S UNIFORMED FORCE

ON March 31, 1910, there were in the boroughs of Manhattan, the Bronx and Richmond, New York, 2,681 officers and men; and in Brooklyn and Queens boroughs 1,694; a total of 4,375. During the first quarter of the year there were 537 cases of illness and injury, or about 12 per cent of the force. This force was distributed among 162 engine companies, 75 hook and ladder companies, 8 hose companies, 10 marine engine companies (fireboats), or a total of 255 apparatus companies. Of these 18 are combination companies, each equipped with engine, hook and ladder truck and hose wagon.

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NEER, which has unusual facilities for furnishing the same, and
will do so gladly and without cost.

AUGUST 17, 1910.

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The Man and The Machine

To the younger members of the fire departments the introduction of automobile apparatus may seem to be something of a revolution, and to introduce too much of the mechanical in abolishing the horses, for which many of them have come to feel a pride and even an affection. Old members of the force, however, remember an even greater revolution, if their memories carry back to the days of the hand apparatus and volunteer fire companies. In those days steam fire engines were unknown, the pumps being operated by hand (many of these old hand engines are still in service in the smaller towns); and the engines were drawn to the fire by hand also, except when an accommodating driver would allow them to be fastened to the rear of his wagon.

Comparatively little money was spent upon the Fire Departments in those days, many of them being volunteer departments, supported by popular subscription. Aside from a hose cart and five or ten lengths of hose and the hand engines referred to, the brilliant uniforms were probably the most important and expensive part of the equipment. The excitement of "running to the fire" frequently included a fight between companies for the honor of being the first to get water from the nozzle. While the amount of water thrown and the effectiveness of operation could not begin to compare with what the smallest city can show to-day, the number of men was very much greater, since these were required to draw the apparatus and man the pumps.

The change from those conditions to the present efficient steam pumps drawn by powerful horses and throwing jets of water of sufficient volume and force to throw down brick walls was vastly greater than that which is taking place all over the country by the adoption of automobile propelled apparatus.

The machine, however, has displaced only the brute strength of men and has reduced the numbers only by those who were engaged in hauling and in hand pumping; and the later change to automobile apparatus has done away with the horses, but the men have been reduced in number only by those who were required to look after the horses while at the fire, the stablemen and a few others; while the internal combustion pumping engines have abolished the position of stokers and considerably simplified the duties of the engineers. The danger, the thrill of which offers an attraction for many of our bravest firemen, still exists; personal bravery is still as necessary as ever; and with all the machinery and mechanical contrivances, it is even more than ever necessary that not only most of the men but all of them should be *men* in every sense of the word that implies courage, self-possession and bodily vigor.

Automobile Economy and Efficiency

THIS has been called the mechanical age, and the substitution of mechanism for muscle has removed much of the poetry and picturesqueness from every phase of life. There can be little question, however, that efficiency, reliability and economy have been increased; and it seems almost certain that this holds true with reference to automobile fire apparatus. Most of those connected with fire departments who have expressed an opinion on the subject have stated their belief that automobile apparatus is more efficient than horse drawn in that it is more sure to reach the fire without accident and can make from two to four times as great speed. As to economy there is not yet unanimity of opinion; nor do all agree as to the freedom from breakdowns of the automobile propelling apparatus. Data on these points are rapidly accumulating, however. We have endeavored to obtain a few figures concerning the relative costs of horse drawn and automobile apparatus, and these will be found upon another page of this issue. The figures there given are for the maintenance of horses and machines only; but there is another saving in that not so many men are required with the auto apparatus, and the machines themselves do not take up quite so much room and the space required for stabling the horses is saved altogether. Consequently, first cost of land and of houses and salaries of men should be included in any comparison made for determining relative economies. Several of these points are touched upon in the letters from fire chiefs which are published this week.

Speed In Automobile Apparatus

ONE argument advanced in favor of automobile apparatus, and much dwelt upon a few years ago, was the great speed possible. This is an undoubted advantage and one of the most important ones. Experiences during the past year have indicated, however, that the question is not how great speed can be obtained, but rather how great speed is desirable and safe. It is stated that one engine which met with an accident

a few months ago was going over 60 miles an hour at the time. Largely as a consequence of this, many fire departments are now specifying that no greater speed than 20 or 30 miles an hour is desired. This certainly is ample. It is seldom that even a suburban department has a run of more than 2 miles, and the difference between traveling at 20 miles an hour and 30 miles an hour over this distance would be but 2 minutes. This time is, of course, of great value at the beginning of a fire, and possibly for suburban engines, where there is not so much traffic to cause danger, the higher speed might be desirable. But in cities the distance to be traveled would seldom be more than a mile, and the number of corners to be turned would necessarily cause the speed to be reduced at each turning so that the maximum difference between a 20 and 30-mile rate would seldom exceed one-half minute. When compared with the constant dangers of higher speeds, we do not believe excessive speeds are worth while.

AUTO ENGINE AT SPRINGFIELD, OHIO

MR. SAMUEL F. HUNTER, Chief of the Fire Department of Springfield, O., sends us the following information concerning the auto fire engine used by their department. This engine was purchased of the Webb Motor Fire Apparatus Company on June 9, 1909. It is a combination, with a pump having a capacity of 700 gallons of water per minute, 1,000 feet of hose and two ladders, with room for six men. This engine responds to every alarm in the city and at the date of writing had made 225 runs over all kinds of streets and in all kinds of weather with no failures against its record. The average cost per day for gasoline, oils, and tire repairs has been about 12 cts. During the months of December, January and February there were some very heavy snow falls in Springfield, at times causing the blocking of street car traffic and interfering with horse drawn vehicles. During the last heavy fall of snow it was almost impossible for the horse drawn apparatus of the department to respond to fires, and some of the machines were stalled in the heavy snow. On one occasion the aerial truck, when responding to an alarm of fire about three squares from the engine house, was unable to come back to the station, the horses having been exhausted in pulling the truck to the fire; in which emergency the auto engine was hitched to the end of the pole with ropes and pulled the truck back to the station through about 18 inches of snow. In wet weather several of the streets became almost impassable because of mud, but the auto has never been stopped by any of them.

ECONOMY OF AUTO APPARATUS

REFERRING to the economy of automobile fire apparatus, Mr. Henry A. Spencer, Chief Engineer of the Fire Department of Chelsea, Mass., states that, the area of that city being only $2\frac{1}{4}$ square miles, the question of "getting there" with horse apparatus is not a serious one. That of economy of maintenance, however, he considers an important factor and has

watched with interest the experience of the neighboring town of Revere with its combination hose and chemical auto. This was purchased in October of 1909 and has been out of service at least one-half of the time since then; but this he believes to be an exceptional experience, caused by faulty construction in the first place and the employment of inexperienced men to run it. In spite of this unfortunate experience he believes that the auto has come to stay and that within the next five years it will be generally adopted for hose wagons, chemicals and combination wagons; any weak points which may now exist being improved upon so that the adoption of these appliances will be demanded on the score of economy if for no other reason.

AUTOS AT NEWBURGH

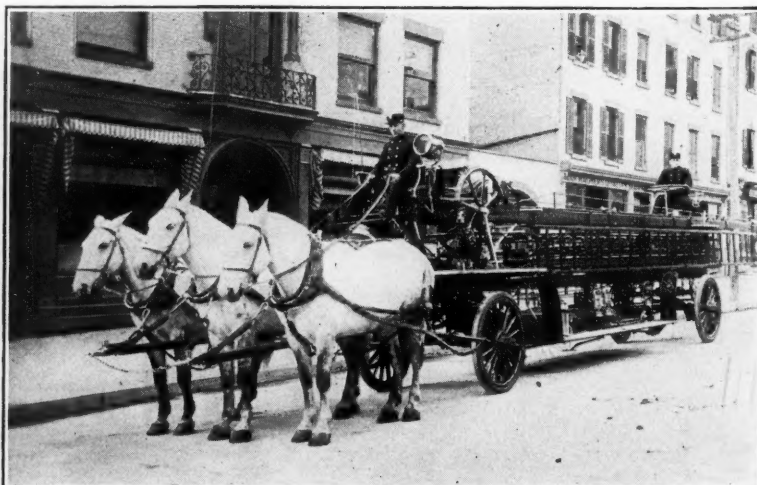
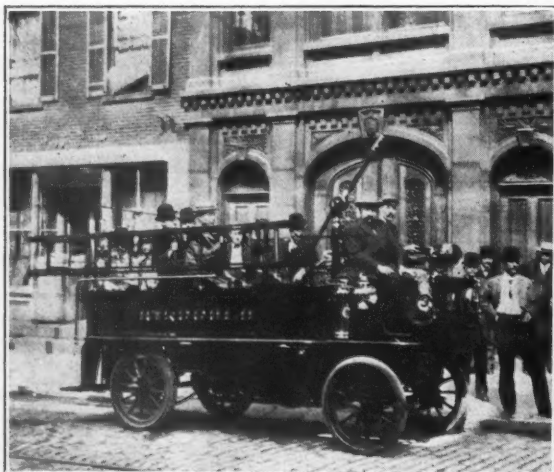
THE Fire Department of Newburgh, N. Y., consists of a chief, three assistant chiefs, 277 members of steamer companies, 75 members of hook and ladder companies, 65 members of chemical engine-hose companies and 190 members of hose companies. The apparatus consists of 4 steamers, 1 second class Clapp-Jones, 1 third class Amoskeag and two third class La France engines; also one chemical engine and hose combined and one auto chemical and hose combined.

The auto carries 1,000 feet of fire hose and 250 feet of chemical hose; also an extension ladder and standpipe. The engine, which is a Knox, has now been in service two years. At first a little trouble was experienced due to the incompetence of the man operating it, but this has entirely disappeared since a competent man was obtained. The cost was \$4,500. It requires from 15 to 20 gallons of gasoline a month and the mechanic or chauffeur receives \$1,000 a year. The repairs have been very few.

For the above description and accompanying illustrations we are indebted to the Chief of the Department, Mr. John A. Keefe.

WORK OF A FIRE MARSHAL

HARRY McNUTT, the newly appointed Fire Marshal of Des Moines, Ia., recently reported as his work for two weeks: Attics cleaned up, 2; defective brick chimneys condemned, 16; defective brick chimneys repaired, 6; elevator doors repaired, 4; fire extinguishers installed, 9; fire extinguishers recharged, 12; gas jets protected, 4; glass put in skylights, 4; glass in basement windows, 6; general conditions good, 34; metal rubbish cans installed, 2; metal rubbish boxes installed, 2; metal waste cans provided, 1; metal drip pans provided, 2; paper removed between buildings, 2; pressing irons made safe, 2; rubbish from roofs, 1; rubbish from hallways, 1; rubbish from sidewalk gratings, 3; rubbish from fire escapes, 2; rubbish from entire building, 1; rubbish from basements, 28; wood rubbish barrels removed, 1; good ash barrels removed, 1. Total inspections, 146; changes secured, 95.



HORSE-DRAWN AND HORSELESS AT NEWBURGH, N. Y.

AUTO FIRE ENGINE AT YOUNGSTOWN, O.

In the report for 1909, Fire Chief W. H. Loller, of Youngstown, O., gives the cost of maintaining an engine company with five horses, and hose and engine auto manufactured by the Webb Motor Fire Apparatus Company each for seven months. The cost of the five horses was \$525.08 or about \$105 per horse; of which total the largest items were: Hay, \$112.80; oats, \$182.60; shoeing, \$48.75; natural gas for keeping up steam in engine, \$59.20; horse blankets, \$30.00. The cost of the engine and hose wagon which replaces the apparatus and five horses was: 305 gallons of gasoline, \$38.70; 16 gallons of cylinder oil, \$6.40; 18 pounds of cup grease \$1.62; repairs to tires, \$37.50; packing, \$0.88; 10 batteries, \$2.50; battery connections, \$0.40; charging battery, \$2.00; extra valve, \$2.25; a total of \$92.25. During this time the engine company traveled 151 miles, 225 yards; and the auto traveled 308 miles, 400 yards. Says Chief Loller "There are nine men in an engine company. At fires, if all men are on duty you have two men at horses, engineer and assistant to engineer, and five men at work at the fire. With an auto with seven men in company, you have one man at apparatus and six men working on the fire. By equipping the hose wagons with motor drive you can reduce the maintenance to a minimum, increase the efficiency of the department and reduce the cost of buildings over 50 per cent. At present I cannot recommend that the engines be placed in the manufacturing or congested districts, as our experience has not been long enough to judge whether they could stand the hard strain on them that would be necessary in case the occasion demanded it; but for the residence and outlying districts they are far superior to the horse drawn apparatus in every way." The department last year had in service 38 horses, and the total cost for care of these was \$5,350 for the year or \$140.80 per horse.

The auto cost \$7,150. In addition to this the department owns an aerial truck valued at \$4,800; a service truck, \$1,500; steamers valued at \$23,600; seven supply wagons valued at \$1,750; a buggy valued at \$450; harness valued at \$1,875; hose, \$12,240.00; smoke helmets, \$160; hand chemicals, \$460.00; horses, \$9,500; and in addition reels, buildings, furniture, heaters, tools and equipments, bringing the total value up to \$254,145.00, or \$103,145 in addition to real estate and buildings.

JOPLIN FIRE DEPARTMENT

THE Fire Department of Joplin, Mo., has in service automobile apparatus consisting of one chief's wagon with one 60-gallon chemical tank and two 3-gallon ones, one pump and hose wagon combined, and two hose wagons each carrying two 3 and two 6-gallon chemical tanks, besides 28 feet of ladders and 1,050 feet of 2½ in. hose. These are housed in three stations. The department has nine square miles of fire area to cover. Mr. A. J. Farlie, the secretary of the department, informs us that automobiles are in their estimation far ahead of horses; that they are cheaper to maintain and can be run for miles and after returning from one fire be run again, which could not be done with horses without a risk of killing them. The department has had five runs inside of one hour, which horse drawn wagons could not possibly have done.

COMBINATION WAGON AT NEODESHA, KANS.

MR. C. O. PINGREY, Chief, Neodesha, Kans., Fire Department writes as follows:

We are using one piece of motor fire apparatus and have had same in service for about two years. The service has been most satisfactory. The machine has never failed to respond instantly and has never failed to reach a fire and to do so in a much shorter time than is possible to do with horses. Fire engineers all over the country are becoming cognizant of the fact that no fire department is complete and offering the highest efficiency without its corps of motors. Those having had experience with motors have learned that they can reach the scene of fires much quicker, carrying with them their equipment and men, thus reducing fire losses to a minimum. The

return trip may be made at a high speed so the apparatus can be quickly put back into service. Several times as much territory can be efficiently taken care of by the auto as can be covered with the horse drawn equipment, and the longer I use the machine, and learn of the satisfaction they are giving others as well as ourselves, the more I become convinced that the horses will rapidly be replaced in all fire departments by this modern and more efficient equipment.

The machine in use in this department is a 40 horse-power combination chemical and hose wagon built for us by the Webb Motor Fire Apparatus Co. The original cost of the machine was \$4,650.00, and the total cost of maintenance for a period of almost two years has been \$114.00 or an average of less than \$5 per month.

COST OF MAINTAINING FIRE HORSES**CONCORD, N. H.**

THE Fire Department of Concord, N. H., operates three engines, four hose wagons, a chemical engine and a ladder truck which are horse drawn, and in addition a third class Metropolitan engine, two hand engines, three hose wagons, and a ladder truck which are hauled by hand. Fourteen horses are kept in service by the department and others have been hired when necessary. During 1909 the cost for forage was \$1,993.10 and horse shoeing \$334.55; a total of \$2,327.65. This is equal to \$166.26 per horse or \$258.63 for each horse drawn apparatus.

SPRINGFIELD, O.

THIS Fire Department operates, besides a combination automobile engine, 2 combination chemical and hose wagons, 6 hose wagons, one aerial ladder truck, 2 service ladder trucks, 4 steam fire engines, one chief's buggy and one fuel wagon. There are 37 horses in service. The feed, harness and shoeing cost in 1909 \$129 per horse. Engine and wagon repairs averaged \$46.22 for each of the 18 pieces of apparatus.

SYRACUSE, N. Y.

As stated on another page, the cost of maintaining 77 horses in Syracuse was \$15,848, or \$205.82 per horse per year.

NEW YORK, N. Y.

THE average cost in Manhattan, New York, is \$134.98 per horse for forage and \$66 for shoeing, or \$200.98, not including veterinary services, stablemen, etc.

SAVANNAH, GA.

DURING the year 1909 the Fire Department of Savannah, Ga., had in service an average of 47 horses and 30 horse-drawn vehicles. The expenditures in connection with the horses during the year comprised \$5,868.65 for feed, \$989.52 for horse shoeing, \$355.55 for treatment of sick stock and \$243.85 for harness and repairs to the same. This gives a total of \$7,457.57, which gives an average of \$158.67 per horse, or \$248.58 per vehicle. During the year four horses were condemned and sold, bringing \$475; and seven new horses were purchased at a cost of \$1,750.

SPRINGFIELD, MASS.

FEED and shoeing at Springfield, Mass., cost \$480 per year for a three-horse team, or \$160 per horse.

The average life of a fire horse there is 6 years. The cost is \$300 to \$350; and when sold they bring \$100 to \$150.

WRECK AND WINDLASS WAGON

THE Fire Department of the District of Columbia has in service a wreck and windlass wagon built under designs and specifications prepared by Mr. Thos. M. Robinson, Superintendent of Machinery. This wagon is used in case of a break down or accident to any of the apparatus. It is capable of raising an overturned engine or truck, even though it or any other piece of apparatus may have overturned into a ditch or street trench. It was built by the Rock Creek Auto and Wagon Works, and weighs 4,500 pounds.

SALVAGE CORPS AND FIRE PATROLS

Maintained by Insurance Companies to Prevent Damage to Property—In Only Twenty Cities—Description of the Newark, N. J., Corps and Its Work—Corps Organization in Other Cities

WHILE every city in the United States has a Fire Department, only twenty have salvage corps. Everybody knows about the Fire Department, salvage corps have had no historian. Although the men's duties are as arduous and dangerous as those of firemen, their deeds have been unhonored and unsung. Why this is so, is not perfectly clear, but one reason may be that the fire department is a public institution in which every citizen owns a share, while the salvage corps is a private organization formed primarily for gain, though, as will be seen, its services are often without reward. Moreover, there is something dramatic about the fire department that commands public attention. The shining metal of the apparatus, the fine horses and harnesses, make it impossible that the fire department should escape notice. But the salvage corps is unobtrusive; it may own fine horses and have a good wagon, but its glory is eclipsed in the public eye by the regular department.

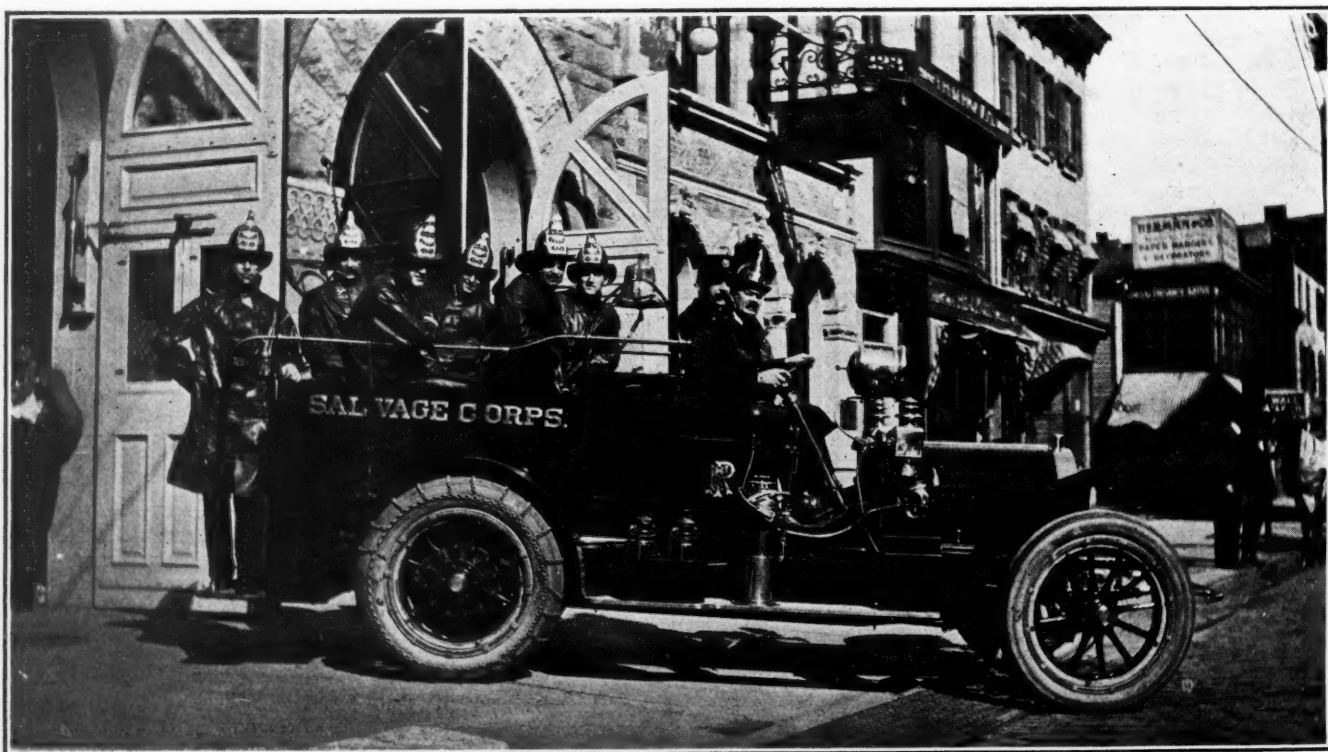
In Newark, N. J., during the past two years the spectacular element which has hitherto been lacking has been supplied by the possession of an automobile patrol wagon which, with its red color, its bell and its horn are attracting public attention, and the fame of the apparatus has spread far beyond the limits of the city of its activities. It is hoped and believed that the lime-light into which the salvage corps has come will be of advantage to the service in Newark and elsewhere and that the value of the service will be more generally recognized.

Just what the legal status of a private organization of this sort engaged in a public duty is, is perhaps a little uncertain. But common sense rules, and the men of the salvage corps have not yet been required to be introduced to the proprietor before going into home or place of business and saving his goods. The duties of the corps, as prescribed by the organization of insurance men which supports it, are to save goods and property at a fire wherever they can and in Newark they respond to practically every alarm. The protection which they are best able to afford is that against water. Hence, to cover

goods or shelves with rubber blankets is the first work. If the fire is in a home, say in the attic, furniture is gathered in a pile in the center of the room and covered. There have been instances even where carpets have been taken up and put in the pile. After the fire is out, there is still work to be done. If water is allowed to stand on the floors it soaks through and breaks the plastering down in the floor below. So the water is carefully swept out. It may be that a hole has been burned in the roof. If left open, rain might come through and do considerable damage. A rubber blanket is therefore rigged up over the opening and kept there until the roof can be repaired. In all this work, it is to be understood, the salvage corps never ask whether or not the property is insured. They could not do so even if they wanted, as there is barely time to act and none to ask questions.

The Newark salvage corps was organized in 1892 by the local Underwriters' Protective Association, and has been under their management ever since. In 1908 a fire occurred at night in the building used by the corps, and spread rapidly, the watchman having deserted his post. The flames, fed by the straw and hay, set the whole building on fire and the men barely escaped with their lives. The apparatus and five of the six horses were lost. Previous to this the establishment of a second station was under consideration. This would have required, besides the building, two wagons, four horses and eight additional men. An auto-patrol wagon had been recently put in service in St. Louis by the protective corps there, and after looking into the matter thoroughly an auto-apparatus was decided on. The machine was purchased from the Locomobile company, at a cost of \$5,200, of the same type that won the International Cup at the Long Island race track.

This machine was put in service October 1, 1908, and has been in service ever since and has made a remarkable record. From October 1, 1908 to June 1, 1910, the machine answered 1,469 alarms, with a total number of 3,933 miles. Additional



AUTOMOBILE OF NEWARK, N. J., PROTECTIVE CORPS



NEWARK CORPS CARRYING RUBBER BLANKETS INTO BURNING BUILDING

alarms, answered by the horse patrol (numbering about three a month), or by trolley or on foot, brought the total up to 1,614 calls; which, it is believed, exceeds those answered by any other organization of the kind in the country. Alarms of all sorts answered in the previous 20 months totaled 1,533.

The total cost of maintaining the auto during the 20 months was \$2,926.69. This included what repairs had to be made, the hiring of an expert for six weeks to train drivers, sending men to the Bridgeport factory, oils, tools and extra parts. The aggregate cost of maintenance for six horses and wagons during the same period before the auto was installed was \$3,031.65. The average for the machine per month was \$146.83; average for horses and wagons, \$152.17. Deducting the items of expense incident to breaking in the men for their new duties, it will be seen that the saving in expense is a considerable item.

The saving in cost of maintaining the machine is, however, a trifling matter as compared with the increase in efficiency. Captain Henry S. Martin, Superintendent of the Salvage Corps, who has "been in the business" thirty-eight years, estimates that the machine saves two-thirds of the time of an ordinary trip. Most alarms are for trifling fires. Awnings and curtains catch fire and are extinguished perhaps before the fire department arrives. All fire departments are worn out in answering calls of this character. To go to the outskirts of the city, three miles from the salvage corps station, which is located near the main cross street of the city, and return after a short stop, would take an hour and a half. With the machine it is done almost daily in half an hour. If the fire is a considerable one then the advantage of the machine comes from its bringing the men to the scene much sooner than they would otherwise get there. The Newark fire department has no auto-apparatus; hence the protective wagon will probably arrive at the fire before much water has been put into a building, even if it happens to be two of three miles from the center of the town. This superiority of the motor apparatus has been demonstrated by test and in actual service in nearly every city in the country and is a well recognized fact, and is no reflection on the efficiency of the firemen in charge of the horse-drawn engines. The horse-drawn engines have their advantages, but in this respect they are completely outclassed.

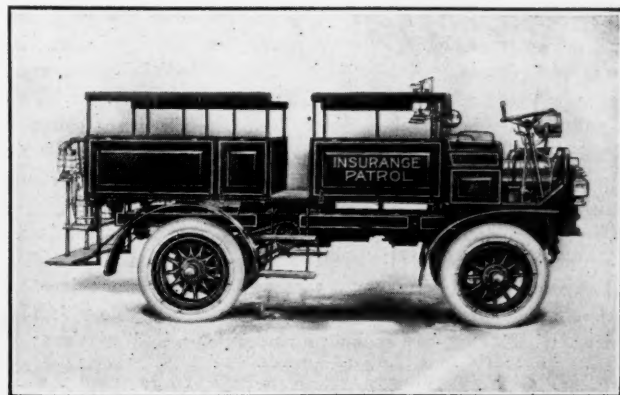
The Newark auto-patrol has a four-cylinder engine, rated at 45-horsepower. It weighs, with full equipment of men and supplies, 7,000 pounds. With supplies only, it tips the beam at 5,610, and the car itself weighs 4,310 pounds. The framework of the body is wood, all else aluminum. Every inch of space is made available for some purpose. The two seats run lengthwise, the men facing each other, three on each side. Underneath, at the front, with doors opening outward, is a compartment on each side for rubber blankets. Two compartments under the rear end of the seats have doors opening upward, and they also carry blankets. Under the floor are two shallow compartments carrying an assortment of implements and a telescoping ladder.

Some slight improvements have been made from time to time; as for example in the matter of searchlights. At first these were burned all the time at night, being turned low ordinarily. This meant considerable expense for acetylene. So an

electric lighting device was installed, and now a pressure of the button as the machines goes out of the house lights them. The machine is well supplied with warning apparatus—reed horn, bell and claxton. The bell can be heard further than the horns. The tires are Fisk demountable, and punctures have been few. A skid chain is used on one tire all the time and in winter on all four.

The fire equipment consists of 25 blankets, measuring 12 by 18 feet and weighing 45 pounds each, made of the best rubber; two hand extinguishers; four lanterns, always lighted at night; 16 feet of telescoping ladder in two sections; door openers, crow bars, jimmies and brooms with detachable handles, and a few minor tools. Extra parts are kept in a well-equipped repair shop, ready to be put on at short notice. Gasoline is kept in a tank buried in the ground in the yard in the rear of the building. Captain Martin takes pride in relating that the machine has never once failed the corps. It has never gone out of the building to answer an alarm without returning under its own power.

As to results: What does it save? What does any other salvage corps save? No definite answer can be given. The National Board of Fire Underwriters has no data. The record of total fire losses in Newark as compared with other cities sheds no light on the subject. Newark fire losses are rather higher than the average of cities of its size, and no definite cause for this can be assigned. The fire department is strong and efficient and the water supply good. The standard of building construction has been rather low and perhaps that is the cause, or there may be more manufacturing and business where the hazard is high. However, there can be no doubt that the salvage corps effect a large saving of property every year. This is estimated rather vaguely by persons in the best position to know at several hundred thousand dollars; possibly as much as the usual fire loss. Specific instances can be given almost indefinitely in which the saving has been calculated with a reasonable degree of accuracy. At a fire in the Walkover shoe store, July 4, 1910, there was an insurance loss of \$3,000; the total insurance carried was \$25,000; five streams of water were put on the building, three of them from the high-pressure fire service. The proprietors have estimated that the blankets put over goods by the salvage corps saved \$10,000 worth of goods. Besides this saving there was, as usual, an intangible saving such as is usually effected in salvage work, which in fact amounts to an insurance of profits. Owing to the salvage corps work the company was able to open for business next day, and the "going value" was saved. A similar result was achieved at a fire this year at Gould & Eberhardt's factory, manufacturers of high-grade machinery. The company would have been put out of business for three or four weeks and would have lost \$20,000 more than the insurance if it had not been for the work of the corps. From \$25,000 to \$35,000 was saved to the owner of the business, although the loss to the insurance companies was heavy. The business went on without the loss of a single day. A couple of years ago a fire occurred at the Westinghouse factory and the company acknowledged a saving of



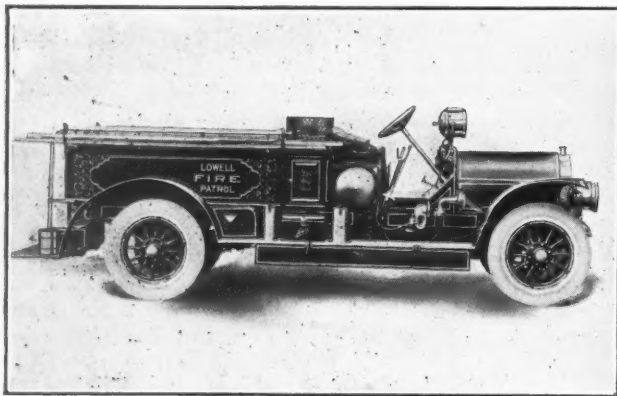
SALVAGE CORPS WAGON, MILWAUKEE, WIS.

\$90,000 by the salvage corps. The company was insured in a mutual concern and the members of the Underwriters' Association reaped no benefit from their work. It would seem as if Underwriters' Associations conducted business on rather a high ethical basis. The following is an instance of the results at a fire in a residence. The householder had an insurance of half the value of his property. The fire loss was half the amount of the insurance. Without the salvage corps the loss would have been total, \$1,000 of it not covered.

The following cities have salvage corps maintained by the local underwriters' associations: Boston, New York, Philadelphia, Baltimore, Chicago, Milwaukee, Cincinnati, Louisville, Albany, Duluth, Minneapolis, New Orleans, St. Louis, St. Paul, San Francisco, Kansas City, Memphis, Mobile, Newark, Worcester.

The funds for the maintenance of these corps are obtained by an assessment on the premiums of the companies interested, amounting as a usual thing to about 2 per cent. The following are recent cost figures for a year's maintenance in a few typical cities: St. Louis, \$50,000; Brooklyn, \$60,000; New York, \$120,000; New Orleans, \$35,000; Chicago, \$135,000. The successful records of the automobile salvage service in St. Louis and Newark has resulted in the placing of quite a large number of orders for similar machines in a number of cities. Boston has two in service and another ordered; Chicago has two in service and Milwaukee one. New York has two ordered. Other cities may have machines ordered or in service.

In a few cities having no salvage corps there are fire patrols, that is, companies which are part of the regular fire department assigned to such work as is done by the ordinary salvage corps. Lowell and Haverhill, Mass., and Providence, R. I., are in this class.



CHEMICAL AND PROTECTIVE COMPANY WAGON
Owned and manned by Fire Department

The Lowell car is equipped with a 5-gallon chemical tank. The machine was made by the Knox Automobile Co. and the description is as follows: Four-cylinder, water-cooled motor, 5½-inch bore, 5½-inch stroke, 5-inch channel steel trussed frame; heavy three-speed selective transmission. Double side chain drive, 40-inch by 6-inch Fisk, bolted-on, heavy car type tires. Fisk demountable rims. Two 3-gallon hand extinguishers; ladders, axes, lanterns, bars, hooks, etc., included in fire equipment; wheelbase, 145 inches. The car can be fitted with one 35-gallon chemical tank. Since April 2 this wagon has responded to every bell alarm and telephone signal. In the first two months of its service it is stated to have saved far more than its cost.

The car owned by the Milwaukee Insurance Patrol is also a Knox, of a somewhat different type as follows:

Four-cylinder, 40 horsepower, water-cooled motor; frame, 5-inch channel steel, three-speed transmission; double side chain drive; wheelbase, 103 inches; pneumatic bolted-on tires; demountable rims, 38 by 5½-inch front, 38 x dual 4½-inch rear. Space for 36 covers and 12 men. Two 3-gallon extinguishing, 4 lanterns, 2 axes, horn or gong and lamps included in equipment. Speed, 30 miles an hour.

A few typical examples of the organization of the salvage corps in a number of cities are as follows:

San Francisco.—Membership 30; three stations: No. 1, 15 men, 2 two-horse wagons, superintendent's automobile, 6 horses and two wagons. No. 2, 10 men, 2 two-horse wagons, 4 horses. No. 3, 5 men, 2 one-horse wagons. Houses are new and well equipped. During 1909 the corps attended 827 or 70 per cent. of all fire alarms.

Mobile.—Maintained since 1878. Five men; one two-horse wagon. Responds to all alarms in business district and important residential sections.

New Orleans.—Membership 34; 4 companies; 4 two-horse wagons in service and 2 two-horse and 4 one-horse wagons in reserve. All alarms responded to.

Duluth.—Organized in 1895. Membership 8; one two-horse wagon in service and one in reserve, with two extra horses. All alarms in business district and nearly all in residential district responded to.

St. Paul.—Organized in 1895. Membership 11; one two-horse wagon in service and one in reserve; 4 horses. All calls in business district and most in residential district within 1½ miles of city hall; responded to 40 per cent. of all alarms; will go anywhere when called.

Minneapolis.—Organized in 1895. Membership, 24; three companies at two houses; 3 two-horse wagons in service and one in reserve; superintendent's automobile. Answer all alarms in business district and many in residential district; will go anywhere when called; about one-third of all alarms responded to.

AUTO WAGON AT HAMILTON, MD.

THE fire company of Hamilton, Md., has had in use for nearly two years a motor driven apparatus which carries two extension ladders, one scaling ladder, 1,000 feet of standard hose, two 15-gallon chemical tanks with 50 feet of ¾ in. hose attached to each, buckets, axes and other supplies. The cost of the apparatus, exclusive of equipment, was approximately \$4,000. The cost of maintenance and repairs does not exceed \$15.00 per month which, of course, is much less than the care of even one horse. President B. K. Purdum, to whom we are indebted for this information, states that the company is a volunteer one and the apparatus is sometimes handled by inexperienced persons, but in spite of this they have reached, without delay, 58 out of 60 fires, which he considers a satisfactory record. The company is now contemplating increasing the horse power of the apparatus from 30 to 60, which will enable it to take all the grades in the town on high gear.

FIRES IN NEW YORK CITY

DURING the three months ending the 31st of last March there were 3,887 alarms of fire in New York City, an average of 43 per day. Of these 1,247 were given verbally, 2,542 were from the street alarm boxes, 29 from special department telegraph signals, 55 by automatic telegraph and 14 by pneumatic telegraph. Of these 3,579 were fires, 52 were indications of fire, and 256 were unnecessary alarms.

Of the fires, 3,236 were in buildings, 14 were in vessels and 329 in other places. Of those in buildings 2,881 were confined to the point of starting, 277 were confined to the building and 78 extended to other buildings. One engine stream sufficed to extinguish 1,048 fires, two or three streams were used on 237 fires, and only 42 fires required more than three engine streams. One high-pressure stream only was used on 125 fires, two or three high-pressure streams on 47 fires, and more than three high-pressure streams on 22 fires. Almost 60 per cent of the total, or 2,058 fires, were extinguished without any engine stream.

Of the total number of fires 1,971 were between 6 in the morning and 6 in the evening and 1,608 were between 6 in the evening and 6 in the morning. The water consumed in fighting these fires amounted to 22,621,264 gallons. This is equivalent to about 90,000,000 gallons per year, or about one-sixth of one day's consumption for ordinary purposes in the city.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets
Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Would Resurface Cobble with Asphalt

Baltimore, Md.—By a simple act of the Board of Estimates, sanctioned by the City Council, it was made plain by City Solicitor Edgar Allan Poe, the City Engineer can be given authority to use next spring as much of his street repair appropriation as he saw fit to resurface old cobble streets with sheet asphalt or any other smooth material. City Solicitor Poe also made it plain that by the language of the \$5,000,000 paving loan enabling act passed by the Legislature in 1908, but never submitted to the voters for ratification, the loan could be entirely used for resurfacing cobble. Divided into annual allotments of \$250,000, such a loan would, in 20 years, resurface 161 of the 251 miles of cobblestone streets in the city with sheet asphalt. The \$5,000,000 paving loan act is one of the broadest in the way of powers granted that has ever been passed. It not only permits the city to resurface cobble streets with any improved material desired but allows the city, in advancing the necessary money from the loan, to assess abutting property owners in whole or in part for the improvement, thus relieving the tax levy in whole or in part of the burden of the loan. One of the objections which the City Engineer, B. T. Fendall, has urged against the adoption of the resurfacing method, which New York, Philadelphia and other cities have used profitably, has been that the law did not allow him to use any of his repair fund for the purpose. The simple change in the law by ordinance that would be required has been explained by the City Solicitor, so that if the City Engineer has only this objection several cobble streets may be resurfaced next spring with smooth material.

Amiesite Roadway to Be Given Trial

Erie, Pa.—The County Commissioners are congratulating the Millcreek township Road Supervisors on the selection of the West Lake road for a new experimental pavement extending one mile west of the city limits. The State Highway Department will stand the expense from the fund for experimental highway building. The new pavement is called "Amiesite roadway," an asphaltic bituminous macadam, which has been used to a considerable extent in New Jersey.

Asphalt Paving at Fort Dodge

Fort Dodge, Ia.—The first yard of asphalt paving to be put down in Fort Dodge was laid last week by the Bryant, Ford McLaughlin Company, which built a large asphalt plant in the southeastern part of the city. Ninety thousand yards of paving will be put down this summer at a cost of \$1.98 per yard. The total cost of the improvement will be \$178,200. The asphalt gangs will comprise fifty men. When they are added, a total of 300 men will be employed at a weekly wage of over \$3,000 per week. The work will take well into the fall.

To See Creosote Block

St. Louis, Mo.—William Buchholz, J. I. Faris and J. P. Gilmer, of the Board of Public Works, and Louis R. Ash, City Engineer, left last week for St. Louis, where they will investigate creosote block paving. They also will visit the creosoting factory in East St. Louis.

To Inspect Wood Block for Paving

Philadelphia, Pa.—Robert Hicks, special inspector for the Highway Bureau, left the city last week for Money Point, near Norfolk, Va., where he will supervise the preparation of the wood blocks which are to be used in repairing Market street, from Sixteenth to Twenty-third street. He will select the timber, and cull out defective blocks prior to their treatment with oil and coal tar. He will also supervise the treatment so far as the impregnation of the wood is concerned. The chemical supervision of the process will be in charge of a New York firm of chemists.

Show Windows on Sidewalks

Fort Worth, Tex.—Many show windows and basement entrances of buildings in Fort Worth encroach on the sidewalks. The city has no power under the present charter to impose a tax on those so benefited. The question has been made the subject of several discussions at meetings of the City Commissioners. It is the intention to ask an amendment of the charter giving the city the right to demand and receive pay for this special privilege. A plan, however, will be tried, and it may be effective. Commissioner of Finance and Revenue W. J. Gilvin was directed to conduct individual negotiations with each and every property owner in the city whose premises encroach on the sidewalks in the manner above specified and endeavor to enter into a voluntary agreement for an equitable compensation for the privileges so enjoyed. The measure of compensation would be the advantages to the property owner through his tenant beneficiaries. It is the belief of the Commissioners that the advantages to the property owners will be so apparent that they will be quite willing to enter into an agreement with the Finance Commissioner to make a proper compensation to the city.

Sub-Sidewalk Space—Rent and Liability

Decatur, Ill.—Mayor C. M. Borchers says the city should charge rent for space beneath sidewalks occupied by merchants, as is the case in a number of other cities. There is also question as to the liability of the city in permitting excavating under sidewalks, the point having been made by Alderman Hall. Neither of the matters was settled by the City Council, which referred to the Sidewalk and Curbing Committee the petition of Frank Curtis to place a new sidewalk in front of his place of business, 156 East Main street, one-half of the fifteen-foot walk to be reinforced concrete and the other half iron with prism glass, with an area underneath.

Improved Streets from Wheelage Tax

Duluth, Minn.—The wheelage tax is now in force in Duluth, and City Clerk H. W. Cheadle expects to do a rushing business for the next few weeks. Incidentally the city will garner between \$15,000 and \$20,000 from the wheelage tax, which was authorized by the citizens at the last election. The money will be applied strictly to maintaining the streets and avenues in the city limits, many of which are sadly in need of repair. The tax ranges from \$3 for a single horse vehicle to 50 cents per horse power for automobiles and \$10 per ton for big trucks. The autos were put on a horsepower basis for the reason that the larger and more powerful the engines the more damage the cars do to the street. At the same time the above amendment to the charter was passed another was carried enabling the conference committee to levy not to exceed one-half mill as a supplement to the wheelage tax. If the full amount is levied by the conference committee this fall, about \$18,000 will be raised in this way. Both taxes would bring the city a total of about \$35,000 to \$40,000 a year, which would be applied to street improvements on local streets.

Boulevards Safe for All

Kansas City, Mo.—The Kansas City boulevards must be for all the people—on foot, in horse vehicles or motor cars. Safety and pleasure for all must be assured. That is to be the new order of things. The activity of the police motor cycle squad to suppress the speeding motorists is not a spurt. It is to be permanent. And the Park Board is to co-operate with the police in making the boulevards usable for all the people instead of an exclusive few. Settees are also to be placed in the park spaces along the boulevards for the promenaders who desire to rest and view "the passing throng." An order has been given for one hundred settees and more will follow, according to D. J. Haff, President of the Board.

SEWERAGE AND SANITATION

Cesspools to Be Abolished in Council Bluffs

Council Bluffs, Ia.—Conditions on Indian Creek in the eastern part of the city are said by city officials to be responsible in a large degree for the proposed stringent regulations introduced in the City Board of Health against the maintenance or future construction of cesspools or open vaults wherever access can reasonably be had to sewers. Peter Smith, City Health Inspector, who made a tour of investigation along Indian Creek in the eastern part of the city at the request of a number of property owners, said he found the situation very bad. Mr. Smith said: "Some five vaults in that part of the city are located so close to the bank of the creek that their contents seep through the soil into it. There has been but little water in the creek this summer, and as a result the odors arising from these nuisances are terrible."

Careless Work in Sewer Construction

Dayton, O.—Careless work in the construction of the sewer at Park and "J" and at Park and Cross streets was discovered by Sewer Superintendent Joseph Madigan when his workmen were cleaning out the catch basins at these places. The sewer was almost completely filled with rubbish, and the annoyance that it has caused residents of the vicinity is believed to be due to the fact that poor connections were made when the catch basins were installed.

Poplar Trees Ruin Sewers—Must Be Destroyed

Greenfield, Ind.—The City Council has passed an ordinance that requires all Carolina poplar shade trees within the city to be destroyed by May 1, 1913. Time is thus given for property owners to grow new shade trees. The poplars are ruining the sewers. The roots are long and grow into the sewer tile.

Await Decision as to Sewage Disposal Plant

Madison, N. J.—Both sides to the controversy over the location of the disposal plant for the Madison-Chatham joint sewer are awaiting a decision from the State Board of Health. The matter was argued before that body last week at Trenton, but decision was reserved. Objections to the placing of the plant just east of Chatham were filed by J. J. Allen and Frank M. Budd, of Chatham. Mr. Budd owns the land upon which the plant is to be located, and Mr. Allen owns property in the immediate vicinity. Leroy A. Gibby was Budd's attorney. Mr. Budd expressed the opinion that the plant was on too low a level. Dr. John Seal, of Paterson, who was present in the interest of certain water works, asked the Board of Health to require a higher state of purification in the effluent. Those present at the meeting from Madison were Councilman Otto Ross and Attorney Charles D. Rathbun. Mayor Frank Kelly, of Chatham, and Clyde Potts, the engineer for Chatham, were present in the interest of that borough.

City Asks State's Aid to Clean Itself

York, Pa.—With some hesitation at the probable consequence the Sanitary Committee of the City Councils has decided to notify the State Health Department of the pollution of Codorus Creek, and ask for an investigation and a remedy. Sanitary Officer Welsh called the attention of the committee to the condition, stating that thousands of fish had died in the poisoned waters, in which youngsters bathe daily. Some part of the pollution is said to be caused by the refuse from paper mills; but the Sanitary Officer estimates that fully 1,800 city cesspools empty into private sewers and thence into the creek, while the city's new sanitary sewerage system lies uncompleted. When Councilmen expressed great indignation at the condition, they were dryly reminded by the officer that the City Hall cesspool is among the number. Somewhat staggered, the committee voted to ask for State action, although it may mean legal procedure against the city.

War on Mosquitoes

San Angelo, Tex.—The City Council has authorized the Mayor to employ two sanitary inspectors with a view to safeguarding the public health from the breeding of mosquitoes on stagnant pools and to otherwise regulate the sanitary conditions of San Angelo.

"Clean-Up Week" in St. Paul

St. Paul, Minn.—St. Paul is to have a "clean up week" if the plans of the Associated Merchants are carried out in anticipation of the convention of the League of American Municipalities, the conservation congress and the State fair. A committee of the Associated Merchants, consisting of Peter McArthur, A. J. Krank and J. F. Moyer, have decided on the following as a few of the things that they have decided to promote:

The thorough cleaning of all streets leading from the Union Depot to the retail district.

The cleaning of all alleys in the city and the removal of all rubbish heaps.

The cleaning of vacant lots.

The flushing of the principal business streets every night during the time the three big affairs are on.

The lighting of the show windows on all the principal streets between Robert and Wabasha streets, until 10 o'clock every night, especially during the session of the League of American Municipalities.

Encouragement of citizens owning homes and of renters to make their lawns and yards as neat as possible.

Pure Food Law Made Effective

Reno, Nev.—Dr. W. B. Mack, at the head of the State Nevada Hygienic Laboratory at the University of Nevada, says that since the pure food inspectors, acting under the law passed by the last legislature of this State, have been at work, the sale of impure milk and other impure food products has been completely stopped. He says that the people of Reno and of nearly all other towns in Nevada are now receiving nothing but pure milk and other food, and that with good sanitary conditions there should be but very little sickness in Nevada in the future.

Sanitary Engineer Investigating Typhoid

Waterville, Me.—The Kennebec water district has engaged George C. Whipple of Brooklyn, N. Y., a sanitary engineer of national repute, to investigate thoroughly the sanitary condition of the city. Mr. Whipple made a visit here last week, took a look over the city, investigated several matters and left the next day for New York, but he will be back again and when his investigations are completed, will make a full report of his findings. Mr. Whipple is familiar with conditions here, for at the time of the change in the water system, he and his men were here eight or nine months. He also was here during another epidemic of sickness some years ago. Mr. Whipple is decided upon one point, that the water in the Kennebec River is polluted. This is made so by the sewage from Madison, Skowhegan and Fairfield. Typhoid exists in Madison and has existed there for some time.

City Prosecutes Water Company for Typhoid

Wilkes-Barre, Pa.—Owing to the increase of the number of typhoid fever cases in the city, Councils have decided to take stringent measures against the Spring Brook Water Company, which is blamed for the spread of the disease. Warrants will be issued for the arrest of the higher officials of the company, charged with violating an ordinance of the city, which provides that consumers must be furnished with filtered water. The penalty for failure to comply with the ordinance is a fine of \$100 a day. Owing to the prolonged drought the company's water supply in its mountain reservoirs has been depleted and it has been compelled to pump water from the Susquehanna River. A great deal of sewage from towns north of Wilkes-Barre finds its way into the river.

Sewer System Nearly Ready

Morristown, N. J.—Upon the installation of a system of signals for the four sewage ejector chambers, the new sewer system will be ready for operation. This work will not take any considerable time, and the plant should be ready for use by September. The signal system is for the purpose of showing when the vaults at the disposal plant do not work properly. They will ring a bell at Police Headquarters. City Electrician Pierson has been appointed by the Sewerage Board as Superintendent of the work. The wires for the electric system will be laid by the New York Telephone Company. Gasoline engines have been placed at the chamber and will supplement the electric system in case of a breakdown. The ejector chambers are located at James street Woodland, Wetmore and Speedwell avenues.

WATER SUPPLY

Addison's Water Not Sanitary

Addison, N. Y.—A few weeks ago a representative from the State Laboratory of Albany was in town taking a sample of water from the Addison Water Works for analysis. Health Officer Dr. H. R. Ainsworth has received a report stating that the water is not of good sanitary quality to use the exact words of the report. In other words while no typhoid or other virulent germs were found in the water, it contains too high a percentage of deposits and is "not of good sanitary quality."

Municipal Water Works Plant Paying Well

Bay City, Tex.—Mayor Sutherland has given to the public a statement concerning the Bay City water works, which is owned and run by the city, which shows that this public utility has earned \$2,573.88 in the first 24 months of its existence. Attention is called to the fact that this doesn't include the cost of watering the streets, which could be safely placed at \$500 per year, and the rental of the fire plugs, which the city would have to pay a private corporation, which would be about \$1,500 annually, making for the two years \$4,000 saved to the city tax payers. This sum, in connection with that actually earned and expended for betterment, would make the total credit to the water system \$6,273.88.

Indianapolis to Sell Water Plant

Indianapolis, Ind.—Over the protests of a delegation of Brightwood citizens, the Board of Public Works has decided to ask the City Council for authority to sell the Brightwood water works plant. A number of residents of the suburb made a last stand before the Board, insisting on further delay in the settlement of the question. The Board refused to postpone action further, saying it feared the Indianapolis Water Company, which is connected temporarily with the Brightwood plant, would shut off its supply of water and the suburbs would have no water for domestic or fire purposes. "If you will give us an opportunity," said M. C. Fiscu, who headed the delegation, "we will show you that if you repair the old plant and extend the mains at least three hundred consumers will be added. These consumers, and the additional fire hydrants added, on which the city would save rental that would otherwise have to be paid to the Indianapolis Water Company, would place the plant on a paying basis." The Board said it did not believe the plant could be placed on a paying basis, and that it could see no reason why citizens of one locality should be furnished with convenience other citizens could not have, but for which they would be taxed. The Indianapolis Water Company formally offered to buy the plant at any figure appraisers might place on the plant and to accept a provision that the purchase price should not be less than \$18,000.

Council Can Make Twenty-five-Year Water Contract

Lexington, Ky.—In the Circuit Court Judge Watts Parker handed down a decision overruling the petition of J. T. Slade and others asking for a permanent injunction against the Lexington Water Works Company and the City of Lexington to prevent them entering into a contract for twenty-five years for supplying the City of Lexington with water. The decision is a victory for the water works company, which can now go ahead with extensive improvements planned for pipe lines. The action has been in court for several months and caused considerable agitation here.

Acid Water Seriously Damages Pumps

McKeesport, Pa.—It was discovered that the acid waters of the Youghiogheny river had eaten the metal of the two centrifugal pumps which pump the water to the purification plant so as to reduce their capacity to 2,000,000 gallons a day. Superintendent D. M. White was afraid that it would be necessary for the city to use raw water entirely for a short time pending the repairs. As it was, a considerable amount of raw water had to be mixed with the softened water. However, the repairs were effected more expeditiously than expected and the pumps were soon sending water to the purification plant at the rate of 14,000,000 gallons a day.

Fine Analysis of Macon Water

Macon, Ga.—The water supply of the city of Macon is remarkably pure and free from bacteria. In drinking it the people are just as safe as if they had procured water direct from a crystal spring, according to an analysis just made by W. T. Gidley, chemist, for Messrs. Sellers and Dozier. This analysis was made at the request of the city Board of Health, and the water used was drawn from an ordinary hydrant in the middle of the day. The report of the chemist with comment by Dr. H. J. Williams, of the board, is as follows:

May 11, '10, Bacteria per cubic centimeter.....	60
May 13, '10, Bacteria per cubic centimeter.....	54
May 17, '10, Bacteria per cubic centimeter.....	44
(Color present)	
May 8, '10, Free ammonia, parts per million.....	.05
May 8, '10, Albuminoid ammonia, parts per million.....	.07
May 17, '10, Free ammonia, parts per million.....	.03
May 17, '10, Albuminoid ammonia, parts per million.....	.06

Respectfully submitted,

SELLERS & DOZIER,
Analytical and Consulting Chemists,
By W. T. Gidley.

Dr. Williams says:

The above report shows that the water supply of the city of Macon is exceedingly pure and above the average water supply of other cities of which there are records. The bacterial count, 44 to 60 bacteria to a cubic centimeter, excludes the possibility of serious danger from the infectious diseases transmitted in water and is much lower than that found in the average public water supply throughout the country. The water of Richmond, Va., during the month of March, showed 117 bacteria to a cubic centimeter and the health department of that city was so much pleased with that figure as to make it a point of special remark in its bulletin of health.

Water Company Offers Concessions for Franchise Renewal

Richmond, Ind.—The Richmond Water Works Company, which within the next year will have to obtain a new franchise from the city, and which also desires to renew its contract with the city for fire hydrants, made it known through one of its officers that it will make valuable concessions to the city in return for a renewal of franchise and contract. In the first place, the company will agree to sell outright to the city for \$700,000. The company agrees that if the city is not able to purchase at a fair valuation of the plant to be determined, that after stockholders receive 6 per cent dividends annually the city treasury shall receive one-half of the net earnings over and above the 6 per cent. In the event that the water company's dividends shall reach 8 per cent on the total valuation, the city will receive all of the excess profits.

Lost 8,500,000 Gallons Water from Broken Main

Syracuse, N. Y.—Assistant Engineer Marshall B. Palmer, of the Bureau of Water, has estimated that 8,500,000 gallons of water ran to waste as the result of the break in the big 24-inch main in South Salina street, just south of Billings Park. Mr. Palmer made his estimate upon the basis of a 36-inch fall in the water level at the reservoir and the amount of water which ran into the reservoir from the two conduits during the period when the water was running from the broken main. Commissioner of Public Works Frank M. Westcott expressed the opinion that this estimate was a conservative one. Mr. Palmer suggested that the pipe may have been weakened by the shock of closing down elevators which are operated by water power. Recurrence of this shock would tend to cause a defective or weakened pipe to burst. The break appeared to have been due to a split several feet long. Commissioner Westcott put in a busy day seeing that damage done by the flood was remedied. About one hundred cellars were filled with water in the central flood zone, due in many instances to the backing up of sewers. Cellars in May place and at other points near Salina and Jackson streets were among those which suffered the greatest damage. The fire engine of Company No. 6, of the Bureau of Fire, was loaned by Chief John P. Quigley and aided materially in the pumping out of cellars. Commissioner Westcott had a large force of men at work cleaning out deposits of mud, which were a foot deep in many cellars. The water main which burst was one laid by the old water company in 1877. The cast iron, of which it is made, is one and a sixteenth inches thick. Corporation Council Walter W. Magee visited the scene of the break. He expressed the opinion that the city could not be held responsible in damages for the results of the flood. No negligence could be attributed to the city, he said, in connection with the bursting of the main.

FIRE AND POLICE

Pompier Corps After Paid Department

Binghamton, N. Y.—Fire Commissioner J. M. Henwood would like to secure the installation of a Pompier Corps as an addition to the Fire Department, but is not very hopeful of such an organization until Binghamton has a full paid fire department, which, under the most favorable conditions, will not happen for several years. All excess funds appropriated in the Fire Department budget next year will be used in taking over such companies as may desire to leave the volunteer department. Protection Hose Company, by a recent vote, has expressed such a desire, and will be the first company cared for. Several other hose companies are also seriously considering disbandment.

Auto Fire Apparatus for Cincinnati Suburbs

Cincinnati, O.—Ordinances for the annexation of Norwood, Oakley, St. Bernard, Elmwood Place, Carthage, College Hill, Cheviot and Sayler Park will be presented to Council shortly, and in all probability will be passed. If the Councils of the different towns take similar action the matter will be submitted to the people at the November election. If the Councils should refuse a petition containing the names of a certain percentage of the electors could force action. At the conference between city officials discussing the proposals last week, Safety Director Small called attention to the fact that automobile fire engines would probably be installed to take care of the suburban places if they were annexed.

New Gasoline Engine Satisfactory

Cleveland, O.—Chief George A. Wallace of the Fire Department last week reported that the first test of the new gasoline fire engine that has been purchased for the Collinwood fire station was entirely satisfactory. "The engine will be in service in about ten days," said the Chief. In a few days Public Safety Director Hogen will appoint the men needed to enable Chief Wallace to organize the new Collinwood company. Ten cadet firemen, two captains and other officers will be appointed.

Red Light Signals for Fargo Police

Fargo, N. D.—The new system of police telephones about to be installed by this city will prove of very effective assistance to the department and will be a decided convenience to the patrolmen as well. This system consists of ten telephone boxes, to be erected on the poles of the Northwestern Telephone Company at the various beats throughout the city. Each policeman will thus be enabled to call up the Chief at the police station whenever he desires, and in addition he will be required to phone to headquarters every thirty minutes during his tour of duty. Should it become necessary to direct the policeman between the times when he must phone to headquarters, a red light is flashed in his special telephone and this can be plainly observed at a great distance. The lights are controlled from the police station and by this means the day and night chiefs are directly in touch with each of their patrolmen during practically every minute of their tour of duty.

New System of Pay for Firemen

Hackensack, N. J.—A communication was received by the Improvement Commission at its meeting last week from H. B. Young, a member of the Board of Fire Officers, in which he spoke of the injustice of the manner in which the firemen are compensated. In the letter he said that should a person become a member of any of the fire companies after the 31st of January they would receive no pay for the year. The reason for this is that the law reads that a member of the fire department to receive the \$12 for the year's service must be an elected member of the company to which he belongs on or before January 1 of that year. Mr. Young requested the commission to pass an ordinance making it possible for the firemen to receive compensation from the date of their joining the department. Dr. M. B. Brinkman made a motion that the commission draft a bill and send it to the Legislature at the next session, changing the present system of payment.

Fire Chief's Auto Travels 10,000 Miles

Dallas, Tex.—In almost as fit condition as the day it made its first run to a fire, Fire Chief Magee's big red touring car last week reached the 10,000 mark in miles traversed since the machine was put in operation nearly sixteen months ago. The automatic speedometer readjusted itself when the 10,000th mile had been completed, and now a modest 58 stands in place of the long list of numerals. Firemen at central station say the machine has not suffered to any extent through the long travel and hard knocks it has received.

Complete Fire Alarm System Being Installed

Ilion, N. Y.—The fire alarm system which the taxpayers of Ilion voted the appropriation for last spring is nearing completion, and J. C. Eichmeyer, for the Utica Fire Alarm and Telegraph Company, is busily engaged in placing in position in the village hall the large switchboard. The switchboard is four circuit storage battery charging and signal line controlling board, consisting of switches for testing lines and instruments and embraces the following switches: Volt and ammeter for measuring current on fire alarm lines and are also used in measuring the charging current in the recharging of the batteries; a line balancing rheostat for regulating the current to the proper amperage; signal line switches for cutting out individual lines for repairs; one bar switch arranged to connect with the four separate circuits into one continuous circuit; jacks for looping in the measuring instrument, fuses for protecting apparatus on the line and ground test.

Switches for locating grounds, etc.: The battery charging circuit consists of an automatic overload switch, auto underload switch and also reverse current switch, used to protect the batteries from injury while recharging them. Double bar switch used to alternate the duplicate sets of batteries from the charging circuit to the fire alarm signal circuits; charging rheostat for regulating the charging current on storage batteries; one voltage switch so arranged that either 110, 220 or 550 volts can be used in charging the batteries. The charging current will be furnished by a 150-watt motor generator set.

A whistle blowing machine is also being installed at the plant of the Remington Arms Company for blowing box signals, which is automatically operated and controlled by pulling a street box, as well as also regulating the indicators and gongs at the engine house. The installation of this system is another step in the advancement of this hustling village, whose people are for progress.

Fire Alarm System Out of Order

Le Roy, N. Y.—Chief Spitzmesser, of the Fire Department, reported to the Village Board of Trustees last week that he had tested the 12 fire alarm boxes and found only five of them in working order. This system is maintained by the Home Telephone Company, and the clerk has been instructed to notify Manager L. B. Eaton and to have the matter attended to at once.

Queens Borough to Have Up-to-Date Fire Service

Long Island City, L. I., N. Y.—Queens Borough is to take front rank in its fire protection service provided the plans of Fire Commissioner Waldo of New York City are carried out. He announces that \$200,000 will be expended in erecting new fire houses, remodeling old one, and installing automobile apparatus to make the long runs which are a feature of fire protection in the suburbs. New stations are planned for Richmond Hill, Far Rockaway, Rockaway Park and Woodlawn, and the old station at Astoria is to be improved. A new central fire station is also to be erected in the borough and an increase will be made in the number of men assigned each station.

Auto Chemical Is Exhibited in City

White Plains, N. Y.—A new automobile chemical wagon, recently purchased for the White Plains Fire Department, was exhibited to Chief Howard and a number of other department officials at fire headquarters in Mount Vernon, last week. The new apparatus is being taken on a tour of a number of places in the county to exhibit it.

Volunteer Fire Department Deserves Help

Morristown, N. J.—There is a growing sentiment in Morristown that the members of the fire department are not receiving as much consideration as their services warrant. Its volunteer department is one of the best in the State, and the town is fortunate in having so well-drilled and capable body of men, who serve it not only without pay, but pay for the privilege. The dues of the various companies, together with the cost of uniforms and the cost of clothing spoiled while in the discharge of their duties, soon mount up on the firemen's expenditures. The question of a paid department has several times been debated, but it is the opinion of Chief J. Fred Runyon that the increase in the efficiency of the department, if any, would not warrant the great increase in cost. Nevertheless, it is felt that the firemen should receive more attention from the Board of Aldermen. Giving their services to the town, they should be supplied with efficient and up-to-date apparatus. Companies have offered to put horses in at their own expense, but the city fathers failed to arrange for it. A case in point is that of Humane Engine Company. The company purchased a team of horses to pull its steamer, after all the liverymen and truckmen in town had refused to supply horses for the work, and is compelled to keep its team in a barn a block away from the firehouse. There is no room for the horses in the house, and though requested to rearrange the quarters, the Board of Aldermen has not done so. The Board of Fire Wardens is supplied with a patrol which, many of its members assert, is unsafe, and they will not ride upon it. A new wagon has been asked for, but has not yet appeared on the scene.

Plan to Prevent Fire Alarm Accidents

New Haven, Conn.—Alderman-at-Large Joseph Morrissey last week visited Fire Chief Fancher, as well as other fire officials, to discuss a plan which he has formulated for protecting trolley cars, automobiles, teams, etc., that happen to be about to pass a fire engine house when the apparatus is coming out to answer an alarm. Alderman Morrissey's plan is to have a big signal gong and a large red globed electric light placed on the street curb at the side of all engine houses that are passed by trolley cars or where there is general heavy travel. As soon as an alarm came in the gong and the electric light would be so attached that the light would burn red and the gong would ring so that it could be heard for some distance. Alderman Morrissey states that the red light could be hung across the street, at a good height in the air, so that it could be seen for quite a distance. The light would, of course, be especially for night, while the bell would take its place in the day time, although the bell would also prove of value at night to those who might fail to see the light. Alderman Morrissey stated that he was prompted in taking up this matter on account of numerous narrow escapes there have been when the fire apparatus, in leaving the engine houses, have nearly collided with passing trolley cars. It is expected the fire commissioners will take the matter up for consideration at the next meeting of the board.

Testing Gas Fire Engine at St. Paul

St. Paul, Minn.—The new gasoline engine recently purchased from the Waterous Engine Company has been brought to fire headquarters for a thorough working test. Engineer Michael Mattocks, who has been in charge of engines for the past forty years, is grappling with the new engine. An engineer from Engine House No. 20 is teaching Captain Mattocks the mechanism of the new gasoline fire extinguisher, which is the only one in the department, and was bought as an experiment to see how gas engines compare with the old steam engines.

Bertillon System and Patrol Wagon Wanted

Waco, Tex.—In his annual report, presented to the City Commissioners to-day, Chief of Police Hollis Barron recommends that the Bertillon system of criminal identification be installed here. Every city of any pretensions now uses it, Mr. Barron declares. He has also asked the Commissioners to purchase a patrol wagon. This portion of the report has been referred to Police Commissioner J. A. Littlefield, who will at once secure data pertaining to the cost of same.

Should Borough Pay for Outside Fire Service?

Steelton, Pa.—At the last meeting of Council a communication was received from the Chief of the Fire Department stating that at the fire in Middletown on April 9, 250 feet of hose belonging to the Steelton department was damaged and soda and acid used to a total cost of \$275.53. A motion was made and passed to send a bill for that amount to the Middletown Council, so the bill was sent and Middletown paid it. A letter was also received and read at that meeting from the Burgess of Middletown giving a vote of thanks to the Borough Council for the services given by the Steelton firemen and the reason for the tardiness of the letter was given that it was mislaid. Much adverse comment is being made by the firemen of the Borough at the action of the Council and many of them say that the bill should not have been sent and that there is no precedent for such action, as such courtesies are always extended by neighboring towns without asking a settlement for damages. Many of them think that the Borough of Middletown having suffered heavy losses from the fire of April 9 are now not financially situated to stand the damages and that the money should be refunded. A great deal of agitation is being aroused and a petition may be presented to Council at the next meeting to pay back the money to the Borough of Middletown.

How Paterson Will Improve Fire-Fighting Force

Paterson, N. J.—Mayor Andrew F. McBride's annual message to the Fire and Police Commission was read at the regular meeting last week, when the Commissioners took action which will lead to ultimate improvements in the fire department as follows:

Erection of a fire headquarters buildings on Van Houten street, where two engines, a truck and chemical engine apparatus will be housed.

Retirement of all firemen not capable of performing the fullest physical duties required in fighting fires and saving lives.

Establishment of a school of instruction and sending six members of the department to New York school of instruction; they then to be detailed for one month of service with some of the busy fire companies of Manhattan.

Establishment of fire companies at Stony road and West Paterson.

Officials Inspect Fire Department

Racine, Wis.—The members of the Police and Fire Commission, together with Alderman Ritter, Chairman of the Fire and Water Committee, Superintendent Walter Driver of the Racine Water Company, and Fire Chief Cape, made a complete inspection of the different fire stations last week, winding up with a test fire run. The department is in splendid condition, though the three oldest stations in the city are somewhat in need of repair. The city has three fire steamers, two of which are out of commission. The old J. G. Meachem steamer is ready for the scrap pile, as the Chief says it is beyond repair, while the old W. P. Packard engine at No. 2 station can be rebuilt and put in first class condition. The horses all are in the best of condition with the exception of the State street team. The Chief is in hopes the Council will put in an automobile chemical and hose truck and save the job of building a new station. An alarm was sent in from the Manufacturers Bank corner. The first company to respond was No. 5, in 1 minute and 30 seconds, with the truck of the same house 5 seconds behind. No. 3 made the run from Sixth street in 1:30; No. 2 in 5:25, and No. 4 in 4:15. The police patrol was given a test run also. A riot call was sent in from the corner of Sixth and Wisconsin street. Driver Yanny was under the chief's automobile, making repairs, when the alarm sounded, but hitched up and made the run in 3 minutes and 15 seconds.

Fire Volunteers Would Quit

Wilmington, Del.—The first step toward a paid Fire Department in this city has been taken by the Reliance Company, which offers to sell its property and all the equipment at Fourth and Lombard streets to the city. It is expected that other companies will make similar offers. The Reliance members offer to continue to run the company as an independent organization until the city is ready to take hold. The city can make a payment down under the proposition and then continue monthly, semi-annual or annual payments until settlement is made.

STREET LIGHTING AND POWER

Testing Gas Meters in Maryland Cities

Baltimore, Md.—The testing of gas meters was taken over by the Public Service Commission from the Department of Lamps and Lighting last week. The commission has also drafted from the Department of Lamps and Lighting, Chief Tester John H. Marley, who will be in charge of the testing of meters for the commission. Mr. Marley has already done several weeks' work for the commission. He was sent to Cumberland to test the meters in that city and in Frostburg, which is supplied by the same company. In the near future the commission will relieve Superintendent McCuen of the gas testing and the inspection of electrical meters. This will further draw upon the force now employed in the Department of Lamps and Lighting. Heretofore the city department employed three regular testers and in busy seasons several substitutes. The Public Service Commission will need a much larger force than did the city department for the inspection of all the gas and electrical companies operating in the State will come under its jurisdiction. There are 16 electrical plants in the State and about 12 gas companies. The cost of testing should not be excessive, for the gas companies are required to furnish the apparatus for testing.

Mouse Ties Up Electric Light Plant

Beloit, Wis.—An erring mouse, which sought an electrical diet, was responsible for the sudden transformation of electric-lighted Beloit into a cloud of darkness which lasted for eight minutes one evening last week. The unfortunate little creature started to make a tour of the electrical power house and an oil switch looked inviting. He became a little too familiar with it and as a result the city was thrown into inky darkness and the mouse was electrocuted, his body being burned to an ashy crisp. The oil switch, which is a costly appliance, conducts the current from a 2,300-volt dynamo into the bus-bars, through which all electricity generated is conducted to the switch board. The mouse attempted to make himself at home upon the terminals of the oil switch, thereby causing the short circuit which was fatal to him and to the switch. Simultaneous with the short circuit, flashes of blue lights poured from the windows of the power house and illuminated the heavens for an instant. Then all was in darkness. The business portion of the city wore a decidedly queer appearance. The street lights and the majority of business houses were darkened and everything came to a sudden standstill. The damage done by the mouse at the electric plant amounts to almost \$150. Besides burning out the oil switch, the short circuit burned out fuses and insulation and created consternation in general behind the marble switch board.

Wires to Go Underground

Grand Ledge, Mich.—The telephone and telegraph wires in this town are to be put under ground soon, and the Grand Ledge Telephone Company has already started to make preparations for this modern idea of doing things that should be done with the wires. Lead cables and conduits have been ordered, and the work will be done as soon as the material for the improvement arrives. When the underground system goes into effect, Grand Ledge will have the distinction of being the first town in Eaton County, or this section of the State, for that matter, to adopt the metropolitan plan of keeping telephone, telegraph and electric light wires out of sight.

Local Power Company Asks for Ruling

Lansing, Mich.—Attorney-General Kuhn has been asked to render an opinion on the power of the State Railroad Commission to fix the rates which power and lighting companies shall charge their customers. The matter was brought to the State's legal department by City Attorney Black of Lansing and representatives of the Michigan Power Company. Some time ago complaint was made before the State Railroad Commission that the Michigan Power Company was discriminating in its rates, and several hearings have been held. It seems that there is some doubt in the minds of the attorneys as to the power of the commission to fix rates, and before any more hearings are held the attorney general must rule on the proposition.

Electric Light Plant Burned—Also Water Shortage

Cresson, Pa.—Cresson was the scene of a disastrous fire last week which resulted in the destruction of the Cresson Electric Light Company's plant and the colliery of the Pennsylvania Coal and Coke Company. The fire leaves the town in darkness until a new plant can be built, and the destruction of the colliery throws 300 men out of employment. The fire originated in the electric light plant, located along the tracks of the Pennsylvania Railroad and near the tippie of the coal company. The light plant burned rapidly and the flames quickly communicated with the coal tippie. When the flames first broke out the volunteer fire company of Cresson was called out and although several streams were played on the burning buildings, the water seemed to add fuel to the flames and all the buildings were burned to the ground. In addition to the light plant and coal tippie the offices of the coal company were destroyed as well as all of the valuable mining machinery. The loss of the coal company and the electric lighting company will amount to approximately \$100,000, the greater part of which is covered by insurance. The town of Cresson is at present undergoing a severe water famine, and the fire materially decreased the small supply of water on hand and hastens a complete famine.

Gas Kills Sixty-five Shade Trees

East Orange, N. J.—Sixty-five trees of large size, mostly maples, in Washington and North Park streets, have died recently of gas poisoning from leaky mains. Councilman F. Joseph Greer says the streets have been torn up for much of the distance named and the damage has thus been intensified. A short time ago an East Orange citizen was charged \$10 because his horse ran away and barked two or three trees in Midland avenue. He paid that bill, although the damage did not amount to hardly anything, and Mr. Greer wants to know if the gas company is going to get off free after killing sixty-five trees? Mayor Cardwell said he would look into the matter.

Criticism of Work on Municipal System

Orange, N. J.—Mayor Arthur B. Seymour has put himself clearly on record as disapproving of the methods of the contracting firm that is installing the pole and wire portion of the municipally owned electric light and power plant. In a letter of criticism the Mayor not only calls attention to the reckless manner of excavating and leaving unprotected the pole holes, but he points out the fact that the work is being delayed, and recommends the enforcement of the \$50 a day penalty for every day the completion of the work is behind the schedule. Other people have remarked upon the unsightliness of the wooden poles that are being erected, and still others are making invidious comparisons of those poles and the ones used by the Public Service Commission. During the time that the latter was developing its plant there was a great hue and cry for buried wires. Now that the city is about to complete the installation of its own plant those who raised the cry before are as silent as the grave.

To Force the Use of Accurate Gas Meters

Trenton, N. J.—The Board of Public Utility Commissioners has announced at a conference ruling, under which it proposes to enforce the requirements of the act compelling gas companies to use meters that shall accurately measure the amount of gas consumed, and which shall at the same time be easily read by the consumer. A further provision is that no meter shall be used that may confuse or deceive the consumer as to the number of cubic feet of gas he has consumed, or as to the price he pays per cubic foot. The law prohibits any company charging rent for its meters. The board directed that each gas light company in the State be requested to answer the following interrogatives:

- (a) As to the styles, types or kinds of meters in use by it.
- (b) As to the number of each style, type or kind employed.
- (c) Whether inspections or tests are made otherwise than on complaint, and if so under what circumstances.
- (d) What rule or rules, if any, are in force providing for tests upon complaint.
- (e) Whether, where tests are made on complaint by a consumer, a charge therefore is in any case made; if so, in what case, and the amount of such charge.

The answers to these questions will be used by the board as a basis for future action upon this subject.

GOVERNMENT AND FINANCE

Tax on Light and Other Poles

Coatesville, Pa.—The Town Council has placed an annual tax of 30 cents on each electric light, telephone, telegraph and similar poles in the Borough.

After Burgess for Selling Goods to Borough

East Pittsburg, Pa.—While Burgess Fred W. Egan was out of town a short time ago, water pipes bursted and flooded the lock-up, and one of the turnkeys secured materials to make repairs from the Egan Plumbing and Contracting Company, of which the Burgess is a stockholder and active manager. Of course the firm had to be paid and now the Borough Council has ordered that two informations be drawn and prosecutions begun. The Burgess says it is spite work, as he vetoed a bill appointing the new Borough Solicitor who investigated the charges.

City Need Not Pay for Building Permit

Evansville, Ind.—Building Inspector S. A. Brentano called on Secretary Heilman, of the Water Works Board last week and asked him why no permit had been taken out for the filter plant being erected by the city. His duty, he said, is to stop work on every structure in the city for which there is no building permit. "There's a \$246,000 building—with no permit," said the inspector. "The fee would be \$246. The secretary didn't know whether to gasp or smile. But he smiled. Then he rang up City Attorney Ortmeier. The attorney said: "Make out a permit, Mr. Inspector. But you cannot charge the city for it. It has the right to put up what buildings it pleases." The permit was issued.

Council Fattens Pay of City Officials

Oakland, Cal.—About \$80,000 in salary raises and new positions created met approval last week at the meeting of the Finance Committee of the City Council, which received for inspection Auditor Gross's figures on the salary expenses of Oakland for the coming year. The salaries of all the assistant chiefs in the departments have been raised from \$25 to \$50 per month, although several raises asked for were cut down by the committee. An argument arose over the request of Dr. R. A. Archibald, City Market Inspector, who asked that his salary of \$100 monthly be raised to \$200. This was objected to by Councilmen Cobbledick and Stachler, who thought that the raise was too much. Cobbledick stated that the Inspector gave but little time to his office. The raise was finally allowed, on the understanding that all of Mr. Archibald's time be devoted to the office.

Research Commission at Work in St. Paul

St. Paul, Minn.—The Municipal Research Commission will at once outline plans for investigating the government of St. Paul. Walter J. Driscoll, chairman of the Research Finance Committee, last week informed Phil W. Herzog, chairman of the commission that the \$5,000 subscriptions needed to carry on the work have been received. The Commission will welcome any complaints or suggestions from St. Paul citizens as to the methods employed by any department of municipal government, the same to be set forth in writing.

Monthly Statement by City Commission

Tacoma, Wash.—The Municipal Commission has decided to comply with the new city charter regarding the publication each month of a statement showing receipts and expenditures and proceedings at the legislative sessions. Five hundred copies of the statement are to be printed and City Clerk W. H. Cushman is to use his discretion as to the manner of having the statement prepared. He will probably call for bids. The information will be put together in pamphlet form and given to all who apply at the Clerk's office. The charter provides also that copies of the statement shall be furnished the public library and the daily newspapers of the city. The Commission has now been in charge of municipal affairs three months. No statement has yet been issued and this is the first time any real move was made to have one issued. City Controller John F. Meads' monthly report will be embodied in it and the City Clerk will prepare the summary of the proceedings of the Commission.

STREET CLEANING AND REFUSE DISPOSAL

Night Street Cleaning Avoids Dust Nuisance

Altoona, Pa.—Street Commissioner W. H. Fields has adopted a new system of cleaning the city streets, the change having been brought about by reason of the kicks of the people of the city in regard to the large amount of dust that is caused when the men cleanse the thoroughfares. During the hot weather and when the water situation is so serious, it is impossible for the Street Cleaning Department to flush the streets or even to sprinkle them to any extent and as a result the dust that arises when the men sweep settles in the stores of the business men or into the homes of the residents along paved thoroughfares. Mr. Fields now has his gang of street cleaners work on the various paved thoroughfares of the city at night, starting after the crowds have disappeared from the streets and continuing until daylight. It is the intention of Mr. Fields to continue this system throughout the summer months, taking certain streets each night until by the time the week's end approaches he will have cleaned every paved street or avenue in the city.

Street Cleaning Campaign

Billings, Mont.—A general cleaning up campaign is now in progress under the direction of Street Commissioner Bryan, who expects to wage it unceasingly until every part of the city has been put in shipshape condition. Garbage of all kinds is being carted to the city dump and yards, streets and alleys are being thoroughly cleaned of cans, rubbish and weeds. Under an ordinance recently passed by the Council all residents are required to place garbage, such as cans, cinders, ashes, paper, etc., in barrels or sacks and refuse of animal or vegetable nature in large cans that it may be hauled away by the Street Cleaning Department. The hauling is done by the city without expense to the householder and the Street Commissioner declares that persons who fail to observe the new law will be arrested and haled into court, where they are liable to a fine.

Circular Distribution Prohibited

Millville, N. J.—The City Council last week passed an ordinance forbidding the distribution of circulars through the streets.

Follow Up System for Garbage Collection

Mount Vernon, N. Y.—The Board of Health, through Mayor Fiske, received a number of complaints on the garbage collection service which Dr. Hughes said had been attended to, that is the Inspector had notified the collector. The Mayor, however, brought out the fact that the Inspector did not return to ascertain if the garbage had been collected. Mayor Fiske said: "The Inspector should see to it that the work is done properly. It is not enough to go and tell the collector about it; he should see if the garbage has been collected. We want to find out if he has done it. The Inspector must follow him up. There is no doubt but that we have got to have some kind of a follow up system."

Will Not Prohibit Sprinkling Asphalt

Paterson, N. J.—A letter was received by the Board of Works last week from the Society for the Prevention of Cruelty to Animals, asking the Board to prohibit the sprinkling of all asphalt streets, as many horses have sprained or broken their legs while others have been fatally injured in falls after the pavement had been rendered slippery through sprinkling. The Commissioners came to the conclusion that so long as the property owners themselves paid for the sprinkling they had no right to interfere and the society will be notified to that effect.

Salt Water Is Used on the Streets

St. George, S. I., N. Y.—The Highway Department of the Borough of Richmond is making a practical test of utilizing salt water for street sprinkling. It has been done at several points on the island and proved a success. It was at first thought that the use of salt water for sprinkling purposes would destroy the polish on vehicles but experience gained in the experiments proves otherwise, and salt water will be used quite extensively in the future for this purpose.

RAPID TRANSIT

East Grand Forks to Have Street Car Line

East Grand Forks, Minn.—With only one dissenting vote, the City Council last week granted a franchise to the Grand Forks Street Railway Company. The franchise is granted for a period of fifty years, and must be accepted within the next sixty days. Manager Campbell of the street railway company stated that work on the construction of the line would be begun at once, and cars would be operating in this city within two months.

Street Car Dispute in Milwaukee Ended

Milwaukee, Wis.—Three ordinances regulating operation of street cars in the city will be recommended for passage as a result of a joint meeting of the Council Committees on Railroads and Judiciary. After a conference with President John I. Beggs, T. M. E. R. & L. Company, the following regulations were decided upon:

All cars to be provided with sand boxes to enable them to be brought to a stop without delay.

Maximum speed of all cars to be fifteen miles an hour on grades and four miles at curves.

Cars to be brought to a stop within two car lengths of the far crossing in congested districts.

Gongs on cars approaching others near crossings to be sounded. All city and interurban cars to be provided with lifting jacks.

Cars to be washed and scrubbed once a week and swept at the end of each route.

Health Commissioner to have authority to inspect all cars and order them disinfected, when necessary.

The action of the committee was not so sweeping as threatened. The Wright ordinance calculated to prevent the use of trailers and more than one step to the pavement, and the Seidel measure to compel the company to provide a seat for every passenger, were not taken up. Mr. Beggs informed the Aldermen that some of the regulations desired were based on theoretical instead of a practical knowledge of railroad matters, and he caused amendments which he said would make them legal.

New Trolley Franchise for Erie

Erie, Pa.—The Northwestern Traction Company, a new company composed of local capitalists, has applied for a franchise for a railroad between Erie and Milcreek Township. The route mapped out by the company reaches the site of the new Pennsylvania General Electric Company's plant by way of East Twelfth street, the central parks by French street, the bay front on Third street, the southwestern part of the city by way of Seventeenth, Liberty and Brown's avenue, and the southeastern section by Seventeenth and Parade streets. They agree to build subways under all steam railroad lines and to pay one-third of the cost when the city constructs any subways through which they have lines, in conjunction with the steam railways; and they promise to give six tickets for 25 cents and issue books containing 25 tickets for one dollar; also to issue and accept transfers from all other street railways under such rules and regulations as the companies may determine.

Will Improve Street Car Service

Pine Bluff, Ark.—John F. Rutherford, Pine Bluff's millionaire lumberman and railway operator, left last week for Chicago, where he will complete the details of a loan of \$350,000, with which he will repair his street car plant, the Citizens' Light and Transit Company. Expected improvements will include more up-to-date cars and an extension of the line.

Street Car Commission for Tacoma

Tacoma, Wash.—Tacoma will have a Street Car Commission if an ordinance which is being framed by Assistant City Attorney Frank R. Baker is adopted by the Municipal Commission. The Commission is to be composed of the Mayor, Commissioner of Public Safety and one other member of the City Commission. The chief duty of this proposed Commission will be to ascertain the carrying capacity of every street car operated in Tacoma and to see that no car carries any passengers in excess of its exact capacity. The ordinance will provide that persons attempting to board a car carrying a capacity load shall be prosecuted and the measure will contain a provision that each car shall be licensed, thus placing them under police regulation.

MISCELLANEOUS

Shade Tree Commission Endorsed

Alexandria, Ind.—The City Council went on record again last week as endorsing the work of the Shade Tree Commission, which was appointed some time ago, and of which the Rev. G. A. Little is the head. Reports made to the Council indicated that citizens in some sections of the city were ignoring the Commission and its requests, and the Council gave notice that it would take prompt action in the case of people who refused to abide by the provisions of the shade tree ordinance.

City Would Have \$100,000 Bath and Laundry

Hoboken, N. J.—If the wishes of Mayor George Gonzales are carried out by the next Common Council, Hoboken will have a handsome combination inland bathing house and public laundry, together with a children's playroom. The Mayor intends to ask a city appropriation of \$50,000 next year to add to the appropriation authorized by the State laws of \$50,000 for inland bathhouses. The extra appropriation will cover the cost of the public laundry and playroom.

Demands City Office Rent

Indianapolis, Ind.—Notice has been given the Westlake Construction Company, general contractor for the new City Hall building, by the Board of Public Works, that the city expects to hold the company liable for the rent of city offices from August 1 to the completion of the building. Under the company's contract the building was to have been completed August 1, but so far the contractor has made no request for an extension of time. Unless the company agrees to pay the rent of city offices until the completion of the building the board will bring suit for the rent after the building is completed.

Mishawaka Adopts Wheel Tax

Mishawaka, Ind.—The City Council has adopted an ordinance taxing all vehicles according to a specific graduated schedule.

Spooning by Phone Costs City \$12,000

Pittsburg, Pa.—"Fine any employee caught spooning over the telephone. Fine anyone who can be proved to have spooned in the past over the phone and to have charged tolls to the city." This is the gist of an order just issued to department heads by Mayor W. A. Magee. It cost the city of Pittsburg about \$12,000 in tolls for her city employees, male and female, to spoon over the telephone wires last year. Young husbands must not even call up their wives either in working hours or at lunch hour over the city phones. Under no conditions are the phones to be used by any employees save on business for the city. The "centrals" in different city departments are instructed to report any violations of this order under pain of losing their own jobs if found out. "I'm an old bachelor and still have hopes," said the Mayor, "but I won't make love over the phone and have some one else pay for it."

One Way of Enforcing Dog Ordinances

Owensboro, Ky.—Mayor Lambert has announced that he will ask the City Council to authorize him to give 10 cents to the policemen for each dog's ear upon which the tax has not been paid. It is the plan of the Mayor to have the policemen kill the canines upon which the taxes have not been paid. They are then expected to cut off the dead dog's ear and present it to the City Clerk and get their reward.

Ban on Noisy Auto Horns

Richmond, Ind.—Fog horns, calliope attachments, chime whistles and all other noisemakers excepting the gentle reed horn will be prohibited from use on automobiles in Richmond if the ordinance now being drawn up passes the City Council. Superintendent Gorman, of the police department, says that a carefully taken census of the city shows that there still is a majority of citizens who are not owners of automobiles and most of them object to the freak noises that are used on scores of the machines. That the peace and quiet of the city is disturbed by these hideous noises is alleged by the police superintendent, who adds that the reed horn is all that is necessary as a warning to the majority who still walk.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Money Wrongfully Obtained

Town of Bleeker vs. Balje.—Defendant was a Supervisor of plaintiff town, but, instead of having his claim against the town for services audited by the Town Board of Audit, as required by law, he annually presented it to the County Board of Supervisors, and the amount audited by it and allowed was included in the tax directed to be levied on the town, the motion for the levy being made by defendant, and the county paid defendant the amount so audited and charged it to the town, and, when the Town Collector paid to the county the money collected under his tax warrants, the county reimbursed itself for the amount paid defendant, and credited the town therewith. Held, that the town could maintain an action against defendant as for money had and received to recover the amount illegally paid him by the county for which the county was compelled to reimburse it, as defendant in legal effect obtained money belonging to the town, though he did not obtain it directly from it, and that a part of the money called for by the town tax warrant was not collected was immaterial; the county having fully reimbursed itself from the first moneys returned by the town tax collector.—New York Supreme Court, 123 N. Y. S., 809.

Computing Debt Limit Exemptions

In re Debt Limit of City of New York.—The City of New York prior to January 1, 1910, issued bonds aggregating \$46,452,222.38, payable between the years 1948 and 1956, to pay the indebtedness incurred under a contract for the construction of a rapid transit railroad. The railroad was operated by a lessee who had contracted to pay to the city \$2,001,472.91 annually. The annual interest on the bonds amounted to \$1,628,318.36, and the amount required each year to provide for the payment of the bonds at maturity was \$490,141.14. Held, that the city, under constitution, as amended by Laws 1910, limiting municipal indebtedness, was entitled to have excluded from the debt limit the bonds which would be provided for by the sum annually paid by the lessee for the payment of interest, and for an amount sufficient to pay the principal of the bonds at maturity, so that no obligation would fall on the city.—New York Supreme Court, 123 N. Y. S., 860.

Assessments—Meaning of "Block"

Boulus et al. vs. City of Iola et al.—In this case it is held that a tract of platted ground, surrounded by streets and forming a portion of a city, constitutes a "block" within the meaning of General Statutes 1909 relating to the method of assessing the cost of street improvements, although the donor of the plat divided the tract into two portions by an alley and designated each portion a block.

The fact that in previous similar cases the city acted upon a misinterpretation of the statute in assessing street improvements does not estop it from now proceeding according to law.—Supreme Court of Kansas, 109 P. R., 405.

Assessment—Injunction

City of Rome vs. Crozier.—This case involving the question whether the complainant and his property were within the corporate limits of the City of Rome or outside of the same, and whether he was subject to municipal taxation, and the evidence being conflicting on this subject, and involving the identification of certain streets named in the act of 1908 altering the municipal limits, there was no abuse of discretion in granting an injunction, to continue until the final trial of the case.—Supreme Court of Georgia, 68 S. E. R., 480.

Defective Street—Bicycle Rider

Bills vs. Salt Lake City.—In an action against a city for injuries to one riding a bicycle owing to an excavation in a street, an instruction that the city owed no greater duty to one riding a bicycle to "maintain its streets in a reasonably safe condition for travel thereon than to a person riding or driving a horse" was not erroneous.—Supreme Court of Utah, 109 P. R., 745.

De Facto Officers

State ex rel. Buckner vs. Mayor of City of Butte.—Rev. Codes, providing that there shall be in every city a police department, as provided by statute, and declaring that in cities of the first class the mayor shall nominate, and with the consent of the council appoint, three residents who shall constitute the examining and trial board of the police department, and that the council of any town or city other than a city of the first class may provide for such a board, are mandatory as to cities of the first class, and create in such cities the office of examining and trial board of the police department, and, on the law taking effect, the mayor of every city of the first class must appoint a board, and the council of a city of the first class may not exercise its judgment as to whether or not a board shall be created. An office newly created becomes ipso facto vacant in its creation. The word "vacant" as applied to an office means without an incumbent, and an existing office without an incumbent is vacant, whether the office is a new or an old one. Where the mayor of a city of the first class appointed three persons to constitute the examining and trial board of the police department created by Rev. Codes, section 3304 et seq., providing that in cities of the first class the mayor shall nominate, and with the consent of the council appoint, three residents to constitute a board, and the persons appointed qualified, they were de facto officers from the time of their appointment by the mayor and their qualification, and the fact that subsequently the mayor submitted the appointments to the council for approval, and that the council refused to approve the appointments, was immaterial. The acts of one who, though not the holder of a legal office, is actually in possession of it under color of title, or under such conditions as indicate the acquiescence of the public in his acts, may not be impeached in any suit to which such person is not a party; he being a de facto officer.—Supreme Court of Montana, 109 P. R., 711.

Street Improvement Assessment—Engineer's Report

Southwick et al. vs. City of Santa Barbara et al.—Inclusion of two district sections of a city, separated at their nearest points by nearly one-half mile, in an assessment district for district street improvements is not authorized by the local improvement act of February 26, 1901, which authorizes the inclusion of "one or more streets in the same proceeding," such provision applying to improvements constituting an entirety. A street improvement "district" is a single portion of a city set off as specially benefited by the improvement. Objection to the improper inclusion of distinct parts of a city in a single street improvement district is available in a suit to enjoin collection of the assessment for the improvement, though not made before the city council. Under the local improvement act of 1901 permitting a street improvement to proceed only after filing of the engineer's report, substantial compliance with the requirements of section 4 respecting such report is necessary. In a street improvement proceeding under the local improvement act of 1901 the description in the engineer's report and in the subsequent proceedings of the exterior boundaries of the benefited district should be as definite as possible. If it is determined by the city that any part of the cost of a projected street improvement is to be paid out of the treasury of the municipality, the amount so to be paid should be deducted from the estimated cost, and only the remainder assessed against the property of district specially benefited.—Supreme Court of California, 109 P. R., 610.

Violation of Ordinances

Rosenberg vs. City of Selma.—The Municipal Code, conferring on the recorder, the person authorized to hold municipal court, jurisdiction over misdemeanors committed within the municipality, or within the police jurisdiction thereof, and providing that the limits of the fine shall be the same as the limits imposed by the State for the same offense, and when the State law prescribes for the offense one or more of the punishments conjunctively the punishment by the municipality shall be as prescribed by law, etc., does not make State misdemeanors offenses against a municipality, but municipalities have the same powers as to orderly government secured by the adoption of ordinances as existed before the Code.—Supreme Court of Alabama, 52 S. R. 742.

NEWS OF THE SOCIETIES

New England Water Works Association.—The annual convention will be held this year in Rochester, N. Y., on September 21, 22 and 23, with headquarters at Hotel Seneca. On Tuesday evening, September 20, the local committee proposes a reception with light refreshments. On Wednesday and Thursday the following papers are expected: Six or seven short papers descriptive of Rochester and its water works; "Steel Pipe Lines," by Emil Kuichling, consulting engineer, New York; "Ice Formation," by Prof. H. T. Barnes, Director of Physics, McGill University, Montreal; "Statistics of Growth of Income," by F. C. Jordan, secretary Indianapolis Water Co.; "Depreciation in Water Works and Methods of Accounting Therefor," by Leonard Metcalf, consulting engineer, Boston; "Investigations Into the Transportation of Sand and Water in Pipes and Hose Lines," by Morris Knowles, chief engineer, and John M. Rice, division engineer, Bureau of Filtration, Pittsburg, Pa. Chester F. Drake, superintendent of filtration of Pittsburg, will open the discussion on the paper. "The Relation of Flies to the Transmission of Infectious Diseases" (Illustrated), by Dr. Herbert D. Pease, Sanitary Expert, Board of Water Supply, New York City; "Corrosion of Metals," by Robert Spurr Weston, Boston, Mass.

The local committee is planning entertainment with excursions to points of interest, probably including one to Niagara Falls on Friday, the 23d. The following are the members of the three committee in charge: Arrangements—Edwin A. Fisher, City Engineer, Rochester, N. Y.; Beekman C. Little, superintendent, Rochester, N. Y.; Emil Kuichling, consulting engineer, 52 Broadway, New York. Exhibits—William F. Woodburn, 400 Chestnut st., Philadelphia, Pa. Transportation—George W. Batchelder, Water Commissioner, Worcester, Mass., and Robert J. Thomas, superintendent, Lowell, Mass. George A. King, Taunton, Mass., is president, and Willard Kent, Narragansett Pier, R. I., secretary.

League of Cities of the Third Class of Pennsylvania.—The following is the full program for the convention to be held at York, August 23-25: Tuesday, 2 p. m., reception of delegates; 2:30 p. m., address of welcome, Mayor Jacob E. Weaver, of York, president of the league; response, Frank P. Cummings, city solicitor of Williamsport; calling of the roll; report of secretary, treasurer and executive committee; 3 p. m., report of the law committee, James A. Gardner, city solicitor of New Castle; 3:30 p. m., "Municipal Revenues," Thomas C. Hare, city solicitor of Altoona; discussion; 4:15 p. m., automobile ride around the city, including a visit to York Water Company's filtration plant.

Tuesday, 7:30 p. m., "The City in Court," some suggestions concerning litigation by and against municipalities, A. A. Cochran, city solicitor of Chester; 8 p. m., "Parks and Playgrounds," illustrated talk by W. L. Loesser of Harrisburg; introduction by George S. Schmidt, of York; 9 p. m., smoker by York Lodge, B. P. O. E.

Wednesday, 9 a. m., "Is Reform in the Law Governing Real Estate Assessments Desirable?" Daniel S. Seitz, city solicitor of Harrisburg; discussion; 10 a. m., "The Issue of Municipal Bonds," Park Terrell of New York; discussion;

10:30 a. m., "The Constitutional Amendments of 1909 and Their Effect Upon Third Class Cities," James A. Gardner of New Castle.

Wednesday, 1:30 p. m., "Commission Government in Pennsylvania," George R. Wallace of Pittsburg; discussion opened up by Joshua C. Taylor of Chester, and Mayor Jacob E. Weaver, of York; 3 p. m., 10-minute talks by Mayor Johnson, of Chester; Mayor Wolf, of Williamsport; Mayor Rick, of Reading; N. R. Turner, city solicitor of Easton; Charles F. McHugh, city solicitor of Wilkes-Barre; P. A. Wilbert, city solicitor of Oil City; James R. Brown, city clerk of McKeesport; G. A. Klesius, board of Public Works, Altoona; 4:30 p. m., exhibition of fire department.

Wednesday, 7:30 p. m., "Plumbing Regulations in Cities of the Third Class," Dr. J. H. Bennett, chairman of sanitary commission of York; discussion; 8:15 p. m., reception and vaudeville at York Lodge, B. P. O. E.

Thursday, 9 a. m., "Powers of Cities of the Third Class Over Grade Crossings," Henry P. Keister, city solicitor of Reading; discussion; 9:30 a. m. questions and answers conducted by P. F. Schoonmaker, city solicitor of Bradford; 10:30 a. m., fixing the place of next meeting; elections of officers; general business; 1 p. m., trip to Gettysburg battlefield; 8 p. m., banquet.

Third National Good Roads Convention.—With St. Louis, Mo., as the place and October 6, 7 and 8 as the dates, extensive plans are going forward for the Third National Good Roads convention, co-operated in by the American Automobile Association, National Grange, Farmers' Union, American Road Builders Association, U. S. Office of Public Roads, and the National Association of Automobile Manufacturers. At the meeting of the general committee held in New York City, August 4, the reports presented from sub-committees made apparent the fact that this gathering of representatives of national organizations will be the most important good roads assemblage ever held in this country. The convention will be divided into two parts, one devoted to the roads proposition in its general aspects, and the other occupied with technical papers prepared by the most noted experts. Chairman George C. Diehl has secured promises of attendance and addresses by men who have devoted years to road building and who have studied the changing conditions of traffic in all its new phases. Invitations to attend the convention will be sent by President L. R. Speare, of the A. A. A., on behalf of the committee in charge of the convention, to the governors of States, mayors of cities, State highway commissioners, park commissioners of cities, county commissioners and town highway commissioners throughout the entire country, as well as to officers of farmers' organizations, automobile clubs, automobile and vehicle manufacturers and other interests involved in road making and road machinery. The first week in October in St. Louis is one of the most delightful times of the year, and through the Automobile Club of St. Louis and other organizations, the well-known Southern hospitality of that city will be once again demonstrated. With the very thorough consideration of the good roads subject, will be interspersed a varied entertainment, which will include a banquet, a steamboat ride and automobile trips to nearby resorts.

Ohio Firemen's Association.—After electing officers and choosing Sandusky as its next annual meeting place, the convention of the Association, successor to the Ohio Fire Chiefs' Association, meeting at Toledo, O., adjourned. Officers of the new association are: Chief T. J. McFarland, Marion, president; Chief D. K. Moser, Warren, secretary; Capt. William Swift, Columbus, treasurer; Chief S. F. Van Time, Denison, first vice-president; Fireman George H. Nienaber, Dayton, second vice-president; Volunteer Fireman J. H. Gosling, Ottawa, third vice-president, and Chief Arthur S. Aungst, Alliance, fourth vice-president. The firemen endorsed Chief William H. Loller of Youngstown for the office of first vice-president of the International Fire Chiefs' Association.

American Association of Park Superintendents.—The annual convention of the association met at Harrisburg, Pa., Aug. 9-11. An automobile trip covering nearly thirty miles and including the city's entire park and playground system was the feature of the first day's session. In the evening, Mayor Meals made a brief address of welcome. Park Superintendent W. H. Dunn, Kansas City, Mo., gave an account of road preservation work done under his direction. J. Horace McFarland, of the Harrisburg Park Board, gave an account of the cost of Harrisburg parks and the expense of maintenance. Their cost was less than quarter of a million dollars and the cost of maintenance \$27,000 annually. Secretary-Treasurer F. L. Mulford read his annual report showing that the association was in flourishing condition. On Wednesday C. M. Loring, for 21 years president of the park commission of Minneapolis, complimented the Harrisburg authorities on the low cost of administration of their parks—\$3,500, saying that he knew of a Western city of about the same size where it was \$27,000. A general discussion took place as to the comparative desirability of stationary and movable park benches. No conclusion was reached, the delegates being about evenly divided on the subject. Thomas M. Backenkoff, superintendent and secretary of the Baltimore Public Bath Commission, gave an interesting lecture on the public bath system of Baltimore, which is as highly developed a system as any in the country. Stereopticon pictures of bathing pools and beaches from all over the country were presented. One of the Baltimore pools the lecturer said covered five acres and had accommodations for 150,000 bathers a year. Peter Bissett, United States Department of Agriculture, presented many screen pictures of scores of trees and flowering plants. Most of these were natives of China, Russia, Siberia and other parts of Asia. Secretary George W. Ehler, of the Public Athletic League of Baltimore, spoke entertainingly and instructively on Public Playgrounds.

Kansas City, Mo., was selected as the next place of meeting and other places balloted for were New York City and Chicago. Following were the officers elected: President, William Zartman, Brooklyn, and vice-presidents, W. H. Dunn, Kansas City; W. R. Adams, Omaha; Charles E. Keith, Bridgeport, Conn.; James B. Shea, Boston; Dr. Frank Baker, Washington, D. C., and J. W. Thompson, Seattle, Wash., secretary-treasurer.

Park Superintendent F. L. Mulford, Harrisburg, re-elected for fifth year.

Western Pennsylvania Firemen's Association.—The annual convention of the association was held at Carnegie, Pa., Aug. 9-10. The officers elected were as follows: President, Samuel Cunningham of North Braddock; first vice-president, Charles P. Heidler, Swissvale; second vice-president, William Alcorn, Mount Oliver; third vice-president, W. L. Emerich, Aspinwall; secretary, W. H. Sharah, Braddock; treasurer, James H. Steel, Wilkesburg; delegate to the State convention, P. J. Kelly, Glassport; alternate, Dr. W. S. Cook, Beaver Falls. The vote for president was close, Cunningham receiving 174 and Steele 161 votes. Monongahela was chosen as the next meeting place. Sixty fire departments, including 3,000 men, took part in the parade. Prize winners were as follows:

Largest and best-appearing company in line—First prize, \$50, won by the Lyman Hose Company of St. Clair Borough; second prize, \$25, won by Sharpsburg.

Finest uniformed company in line—One prize, \$25, won by Aspinwall.

Finest hose reel or wagon drawn by hand—First prize, \$35, won by North Braddock; second prize, \$15, won by West Bridge-water.

Finest hose or reel wagon drawn by horses—First prize, \$35, won by Carrick; second prize, \$15, won by Etna No. 1.

Finest hook and ladder truck drawn by hand—One prize, \$35, won by Lyman Hose Company of St. Clair Borough. This was the only truck of the kind in the parade.

Finest hook and ladder drawn by horses—First prize, \$35, won by Bellevue; second prize, \$15, won by the Cochran Hose Company.

Companies having finest and largest bands—First prize, \$50; second prize, \$25; both given to Aspinwall and St. Clair Borough Bands, with equal number of men, no difference in music or deportment. Companies were requested to divide equally the \$75, or to toss a coin for first and second prizes.

Best drill—McDonald Fire Company; prize, \$50; no competition.

Vermont State Firemen's Association.—The twenty-first annual convention was held at Burlington, Aug. 10-11. A parade and tournament were the features of the meeting. The following officers for the ensuing year were chosen: President, D. G. Bryant, of Ludlow; vice-president, C. R. Gladding, of Barre; J. H. Donnelly, of Vergennes; G. T. Kidder, of Vergennes; G. T. Kidder, of Middlebury; B. H. Moran, of Burlington; H. H. Hodgdon, of Barre; secretary, E. D. Moore, of Bennington; treasurer, L. C. Grant, of Burlington. Executive committee: Frank R. Stone, of Middlebury; C. B. McAllister, of Montpelier; J. F. McCann, of Bellows Falls; J. N. Beach, of Ludlow; C. O. Averill, of Barre. Auditors: E. A. Prindle, W. P. Powers, A. A. Whitcomb. Statistician, F. E. Perkins, of Burlington. Elected honorary member, W. N. Bryan, of Ludlow.

Calendar of Meetings

August 16-18.
Wisconsin Paid Firemen's Association.—Annual Convention, La Crosse, Wis.
August 16-19.
Firemen's Association of the State of New York.—Thirty-eighth Annual Convention, Watertown, N. Y.—Thomas Horahan, Secretary, Frankfort, N. Y.
August 17-20.
National Firemen's Association.—Thirteenth Annual Convention, Rochester, N. Y. Bert Fisher, Secretary, 3812 Wabash ave., Chicago, Ill.
August 18-19.
Seven County Firemen's Association.—Twelfth Annual Convention, Rochester, N. Y.
August 22.
New York State Fire Chiefs' Association.—Meeting and Banquet, Syracuse, N. Y.
August 23-25.
League of Third-Class Cities of Pennsylvania.—Annual Convention, York, Pa.—Mayor Jacob E. Weaver, President, York, Pa.

August 23-26.
League of American Municipalities.—Annual Convention, St. Paul, Minn.—John MacVicar, Secretary, City Hall, Des Moines, Ia.

August 23-26.
International Association of Fire Engineers.—Annual Convention, Syracuse, N. Y.—James McFall, Secretary, Roanoke, Va.

August 24-26.
Virginia State Firemen's Convention.—Alexandria, Va.—G. C. Cummings, Secretary, Portsmouth, Va.

September 5.
Greene County Firemen's Association.—Twenty-second Annual Convention, Tannersville, N. Y.

September 5.
Rhode Island State Firemen's League.—Annual Muster, Manville, R. I.

September 5-9.
American Public Health Association.—Annual Meeting, Milwaukee, Wis.—W. C. Woodward, Secretary, Washington, D. C.

September 6-8.
Association of Edison Illuminating Companies.—Annual Meeting, Thousand Islands, N. Y.—Walter Neumuller, Assistant Secretary, 55 Duane St., New York, N. Y.

September 6-9.
Pacific Coast Association of Fire Chiefs.—Eighteenth Annual Convention, Stockton, Cal.—A. A. Sumner, Secretary, Anacortes, Wash.

September 6-9.
International Association of Municipal Electricians.—Fifteenth Annual Convention, Convention Hall, Rochester, N. Y.—Frank P. Foster, Secretary, Corning, N. Y.

September 8-12.
Michigan Gas Association.—Annual Meeting on Steamer sailing from Detroit, Mich.—Glenn R. Chamberlain, Secretary, Grand Rapids Gas Light Co., Grand Rapids, Mich.

September 14-15.
Connecticut State Firemen's Association.—Twenty-seventh Annual Convention, Waterbury, Conn.

September 14-16.
League of Michigan Municipalities.—Annual Convention, Lansing, Mich.

September 20-22.
Central States Water Works Association.—Convention, Indianapolis, Ind.

September 20-23.
Kansas State Volunteer Firemen's Association, Eureka, Kan.

September 21-23.
Massachusetts State Firemen's Association.—Thirty-first Annual Convention, Lowell, Mass.—Burton Steere, President, Springfield, Mass.

September 21-23.
Colorado Electric Light, Power and Railway Association.—Annual Convention, Colorado Springs, Col.—J. C. Lawler, Secretary, P. O. Box 938, Colorado Springs, Col.

September 21-23.
New England Water Works Association.—Annual Meeting, Rochester, N. Y.—Willard Kent, Secretary, Narragansett Pier, R. I.

September 21-23.
Massachusetts State Firemen's Association.—Thirty-first Annual Convention, Lowell, Mass.

September 26-30.
National Irrigation Congress.—Annual Meeting, Pueblo, Col.—Arthur Hooker, Secretary, Pueblo, Col.

September 28.
New Hampshire State Firemen's Association.—Convention, Meredith, N. H.

October 6-8.
American Automobile Association in cooperation with the National Grange, Farmer's Union, American Road Builders' Association, U. S. Office of Public Roads, and National Association of Automobile Manufacturers.—Third National Good Roads Convention, St. Louis, Mo.

October 10-11.
Massachusetts Police Association.—Annual Convention, Holyoke, Mass.

October 10-14.
American Street and Interurban Railway Association.—Annual Convention, Niagara Falls, Ontario.—H. C. Donecker, Secretary, 29 West 39th St., New York, N. Y.

October 11-16.
American Society of Municipal Improvements.—Seventeenth Annual Convention, Erie, Pa.—A. Prescott Folwell, Secretary, 239 W. 39th St., New York, N. Y.

November 14-18.
National Municipal League.—Annual Meeting, Buffalo, N. Y.—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

November 21-23.
City Commission Congress.—Meeting, Galveston, Tex.—R. E. L. Giles, Secretary, Galveston, Tex.

PERSONALS

CLARKE, Dr. M. J., Sumrall, Miss., has been nominated for Mayor at the primary.
CROCKEN, E. M., East St. Louis, Ill., has been appointed Engineer and Superintendent of Park district; he is a brother of City Engineer W. J. Crocken.

DAVENPORT, H. H., has been appointed by the Connecticut State Highway Commission district, District Superintendent of Roads for Windham County.

DOREMUS, B. W., Roselle Park, N. J., has been elected Chief of the Fire Department.

FARNAN, THOMAS F., Baltimore, Md., has been reappointed Marshal of Police for a term of four years.

GRUNSKY, C. E., formerly City Engineer of San Francisco, who has been located in New York during the past several years, where he has been doing work for the United States Government, has returned to San Francisco where he will resume the practice of civil engineering at 2714 Steiner Street, San Francisco, Cal.

HAMMEL, V. F., engineer in charge of the Pittsburg office of J. B. Hogg, civil and mining engineer, has resigned and will take charge of the design and construction of the public water supply and power house improvements for the Union Utilities Company, Morgantown, W. Va. The work consists of the construction of a 75,000,000-gal. storage reservoir, a concrete gravity dam, and miscellaneous power house improvements.

HARTMAN, ALFRED H., formerly assistant division engineer for the Baltimore Sewerage Commission, has been promoted to division engineer in charge of the storm water and low level division in place of Herbert N. Knight, resigned. Mr. Knight has accepted a position with the M. A. Talbot Company, contractors.

HARRINGTON, JOSEPH D., Bemidjie, Minn., has been appointed Chief of Police to succeed Allen Benner.

HORINE, DR. A. G., Brunswick, Md., has been re-elected Mayor.

JONES, WILLIAM, Police Sergeant, Schenectady, N. Y., recently celebrated the 40th anniversary of his connection with the Schenectady Police Department.

LAYTON, JAMES, Chief of the Long Branch, N. J., Fire Department, was presented with a silver loving cup on the 25th anniversary of his enrollment in the Department.

LEONARD, EDWARD L., Auburn, N. Y., has been appointed Commissioner of Police.

MARLEY, JOHN H., Baltimore, Md., has been appointed Inspector of Gas Meters by the Utilities Commission.

MELBUS, ALFRED G., Kansas City, Mo., Captain in the Fire Department, was killed at a fire August 1.

ROBERTS, CHARLES J., Weston, Ind., has been declared the legally elected Mayor by the Circuit Court.

ROBINSON, W. F., Mayor of El Paso, Tex., was buried under a mass of brick and instantly killed, August 14, while trying to save five firemen from a falling wall at a department store fire. Fireman Ware was also killed by the falling wall, and Fireman William Robinson and Assistant Chief Sullivan were dangerously injured.

SIMMONS, J. EDWARD, prominent banker and former President of the Board of Water Supply of New York City, died at Lake Mohonk, N. Y., Aug. 5.

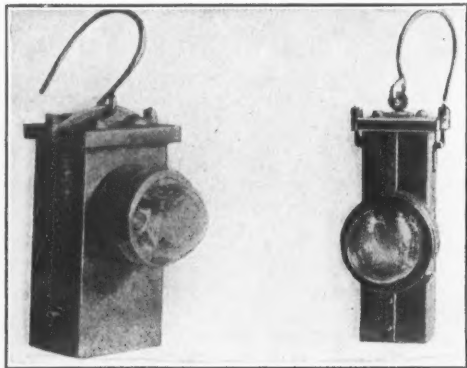
THOMASSON, CAPTAIN CARE, Newport, Ky., has been appointed Chief of the Fire Department to succeed Fred Schmidt.

VANDERHOLT, FRED, Chief of the Fire Department, Sharon, O., has been elected Fire Marshal.

MUNICIPAL APPLIANCES

Firemen's Acetylene and Electric Search Lights

THE lights shown in the cuts are made by the Servus Rescue Equipment Co., Newark, N. J., for the purpose of illuminating the interior of buildings, to facilitate fire fighting or rescue work, and for street use. One man can provide illumination for a gang of hose



FIREMEN'S ELECTRIC LANTERN

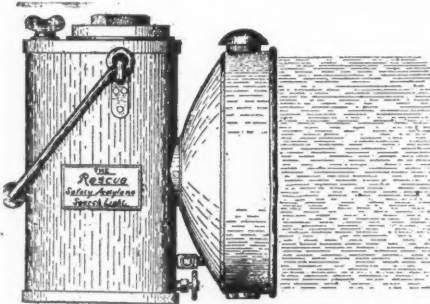
men or exploring party and the rest need not be encumbered with lanterns, allowing them the free use of both hands. The acetylene is lighter and gives more light, but under certain conditions and in certain atmospheres it will be extinguished, although not nearly so quickly as an oil lantern. The electric storage search light has a 20-candle power tungsten lamp and powerful parabola reflector, and nothing will extinguish it except turning the switch. Two sizes of electric hand lanterns are made, as illustrated. These give a strong and well diffused light and are so strongly built that they are practically indestructible. No amount of hard usage will damage them, and no gas or smoke will extinguish them, nor can any gas be exploded by them. They cannot be undercharged or overcharged, or overrun. They hold their charge until used. These batteries are a new development, having for their poles silver and cadmium, and an alkaline solution. It is a hard matter to get around a smoke-filled building with a good light, but with no light it is serious, and an oil light will not burn in dense smoke.

All of the batteries are recharged from the regular electric direct current. They can be recharged during the day

and are always ready for emergencies. The service of an electrician is not essential, all directions being supplied with the lamps.

The Invincible Nozzle

THE Invincible Nozzle is manufactured by Andrew J. Morse & Son, Inc., Boston, Mass., a firm that has been manufacturing nozzles for 30 years. This nozzle, which has been recently placed on the market, carries a partition well down into the throat of the Y, and separates the water into two parallel streams, with practically no loss or eddies. The water then travels through two arms of uniform size and without obstructions, such as would be caused by bolts. The two streams run parallel before uniting in one, thus avoiding the friction losses incidental at this point in other types. After thus uniting the stream passes through a play pipe bored perfectly true. The water is discharged through a well-shaped tip, giving a beautifully solid stream. This nozzle may be applied to wagons for Fire Department service in several ways. The most usual position is the center of the wagon, directly behind the seat. Another method is to cut away the rail and set the nozzle close to the side of the wagon. The nozzle may also be attached to two rungs near the top of an aerial ladder. Water is supplied through hose attached to the nozzle base and extending to the ground, where a gate and three-way siamese should be attached. The stream can be directed to any point of the horizon by rotating the turntable. Elevation and depression of the stream is done with a hand wheel reached from the platform. A shaft running up the under side of the ladder ends in a worm which drives a worm



FIREMEN'S ACETYLENE LANTERN

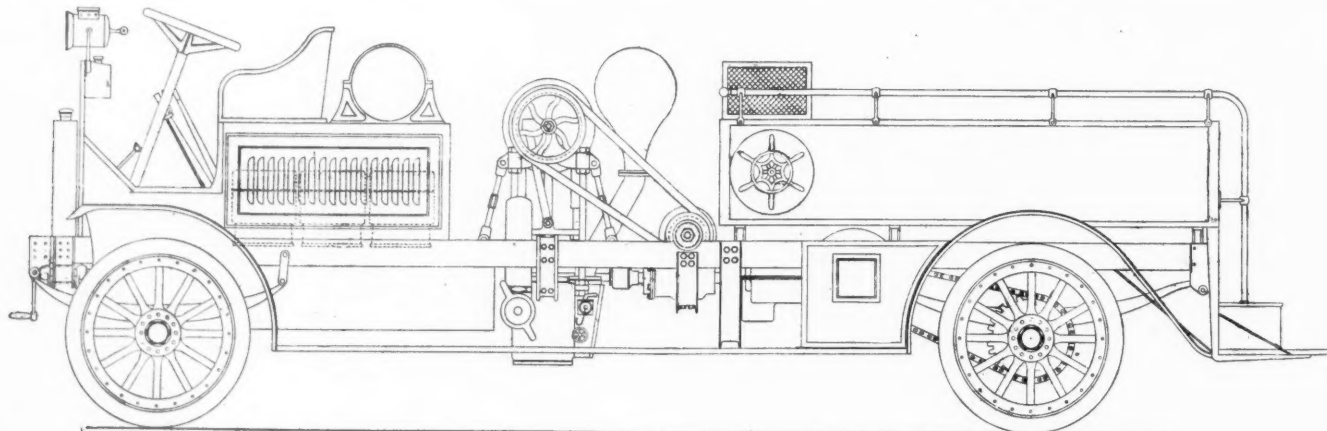


INVINCIBLE NOZZLE FOR FIRE DEPARTMENT WAGONS

gear on the playpipe. The nozzle is also useful mounted as a deck pipe on a water tower. Large-sized Invincible nozzles are made for fire boats. The manufacturers claim that the loss in pressure of the water passing through these nozzles is much less than in other makes.

New Automobile Fire Engine

THE Knox Automobile Company, Springfield, Mass., has prepared plans for an automobile fire engine. The Knox chassis, made of channel irons of 2 per cent. carbon steel, supported by a truss, will be used. The body of wagon will contain room for hose and men. The vertical cylinder pumps will be located between the body and the driver's seat, not far from the middle of the chassis. The pump will be driven by a noiseless chain running off of the jackshaft, which also drives the automobile. While definite details have not been announced it is to be presumed that the engine's wheels, tires, etc., will be of the best and most celebrated kind used in other Knox fire apparatus. The company will also probably manufacture the pumps.



DRAWING FOR NEW AUTOMOBILE FIRE ENGINE BY KNOX AUTOMOBILE COMPANY

Electric Vehicle Suitable for Fire Department Use

THE "Couple-Gear" electric and gas electric freight vehicles made by the Couple-Gear Freight Wheel Company, Grand Rapids, Mich., are claimed to be specially adapted for use as bodies for mounting heavy Fire Department apparatus, such as ladder trucks. The invention consists in the mounting of an electric motor inside each of the four wheels of the wagon, current being supplied from a storage battery or a gasoline engine and dynamo. The couple-gear is claimed to be an advanced and distinctive mechanical means for transmitting the energy of the electric motor to the propelling wheels. A greater mechanical efficiency than has been heretofore obtainable is claimed. This makes it possible for the vehicle to travel further with a given capacity and weight of battery. Referring to the cut, it will be seen that the axle stubs on which the wheel turns are integral with the motor castings. An elongation of the inside stub (not shown in the cut) is keyed in a taper sleeve in the steering knuckle, and this holds the motor in a fixed horizontal position while the wheel revolves around it. The armature sets at a slight angle to the plane of the wheel to permit the two pinions to engage their respective halves of the "double" cog-rack while they remain free of the other half. This enables them to work from their opposite sides and to thereby cause the wheel to revolve.

The force of the motor is applied to the rim of the wheel at two opposite points. There is a balanced division of the work between the two pinions, accomplished by a simple rocker device in the armature shaft, which is called the "evener." This arrangement produces what is known in mechanics as "couple-action," from whence the name couple-gear is derived. Couple-gear efficiency in transmitting the motor-energy to the wheel, with a gear reduction of 25 to 1, is claimed to exceed 97 per cent at full load for the motors.

The extremely high efficiency of the couple-gear is accounted for by the manufacturers as follows:

First—The entire force exerted by the motor is in the direction in which the wheel is turning, and there is no pressure

on the wheel bearings except that caused by gravitation. (It is the same as winding a watch with the thumb and finger, except that the motion is continuous. All other methods of transmitting the power to an automobile wheel are to one side of the wheel only, which method uses the axle as a fulcrum in applying the force to the ground.)

Second—The two driving pinions, each having but one-half of the work to do, are much smaller than would be necessary under ordinary conditions. This makes possible the single reduction of 25 to 1 and avoids the losses of a countershaft arrangement.

Third—By virtue of the "evener" device which causes the pinions to work on a balance, the theoretical rolling action between the gear teeth is more nearly approached than in ordinary gearing, thereby increasing the efficiency and greatly reducing the wear.

Fourth—The usual end thrust of the bevel pinion is overcome by the equal tendency of the other pinion in the opposite direction.

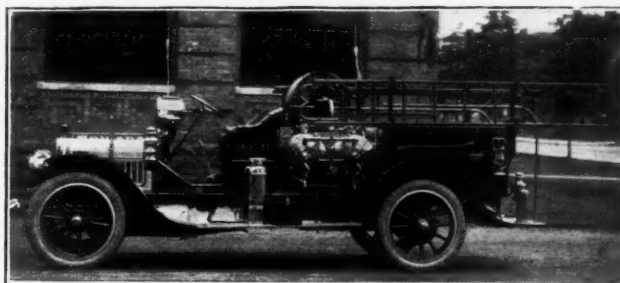
Pyrene

A PYRENE cylinder is always carried on the automobile used by Chief Louis Krug of the Hartford, Conn., Fire Department in the place of the chemical tank ordinarily carried on Fire Department automobiles. The Chief with it has personally extinguished several gasoline automobile fires. Pyrene is the only extinguisher so far as we know that will extinguish such fires and at the same time do no harm to any part of the automobile.

Pyrene is the trade name of a liquid carried in a cylinder with a handle operated like a syringe. It is some times referred to as a Pyrene gun. The liquid, when sprayed on a fire, forms a gas which smothers the fire at once. As stated the liquid is not injurious even to delicate fabrics and does not burn the flesh. Moreover, it is stated that a person can breathe the atmosphere containing a considerable amount of the gas formed by heating the Pyrene without injury. The extinguisher is made by the Pyrene Manufacturing Co., 400 E. 33d street, New York.

Auto Combination Chemical and Hose Wagon

A NEW Pope-Hartford combination chemical and hose wagon has been delivered to the Fire Department of Hartford, Conn. The machine has a wheel base of 130 inches with 36-inch Fire Department artillery wheels. These are equipped with 5-inch tires of the quick detachable style. The motor is a four-cylinder water-cooled gasoline engine, with the cylinders cast in pairs. The heads and water jackets are cast integral with the cylinders, the valves are all mechanically operated and situated in the head, being operated by overhead rockers and a set of push rods actuated by single cam shaft. The driving is done through the shaft, with universal joint and pinion, and bevel geared to the rear axle. The transmission is of the selective type, with three speeds forward and reverse. The shaft and gears are of chrome nickel steel, with engaging ends of the teeth beveled by an entirely new process. With the exception of the hand levers the gear-changing mechanism is entirely encased and so hung in the frame

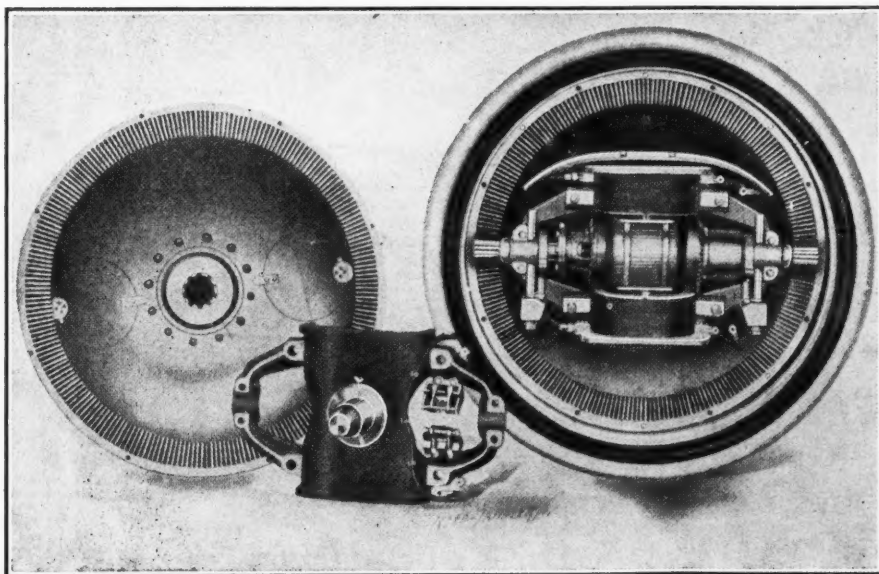


POPE-HARTFORD COMBINATION HOSE AND CHEMICAL AUTO

that, it is claimed, no manner of twisting will cause the mechanism to jam and refuse to work. The bearings are of special material, insuring long life without frequent adjustment. The lubrication is by force feed. Reservoirs with stand pipes are provided and circulation kept up by a large suction pump. With one filling it is possible to run 750 miles.

The fire-fighting equipment consists of two 40-gallon chemical tanks, situated directly behind the driver's seat, and running crosswise of the frame. Just back of the tanks the machine is provided with two seats running lengthwise of the body with room for eight men. Just above the tanks there is a hose reel adapted to carry 200 feet of one-inch chemical hose. There are two extension ladders hung one on either side of the car. There are two three-gallon hand chemical extinguishers carried on the running board. An extra charge of chemicals for each of the large tanks carried on the rear running board in metal jars. Besides this there are firemen pickhead axes, door jimmy and the standard fire department kerosene hand lamp.

The machine can make forty miles an hour. To facilitate driving at night there is a large searchlight hung on the dash board in a swivel bracket. A siren, which is coming to be recognized as the Fire Department signal, is mounted on the dash, where the man in the seat beside the driver can operate it on the way to a fire, and assure right of way. The large searchlight on the dash, as well as the two regular gas headlights, are raised to be lighted by electric spark operated from the seat. There is a very complete equipment of automobile tools and special wrenches for use with the large chemical tank and hose connection.



COUPLE GEAR FOR AUTO VEHICLES

With side of wheel and front of motor removed, giving access to armature, field coils and bearings

TRADE NOTES

Cast Iron Pipe.—Chicago: Owing to the decline in pig iron pipe is quoted 50c. lower in this market; 4-inch, \$27.50; 6 to 12-inch, \$26.50; 16-inch and up, \$25.50. Birmingham: A fair amount of orders have been received. Indications for new business along the Pacific Coast and in the Middle West is still encouraging, and ample tonnage for the fall and winter months' operations is expected by all interests. Quotations: 4 to 6-inch, \$22.50; 8 to 12-inch, \$21.50; over 12-inch, average, \$20.50. New York: General business continues exceedingly dull. Sharp competition developed in the Boston contract for 500 tons of water pipe, the lowest price being \$21.80—\$1.50 below the next lowest bid. Quotation: 6-inch, car load lots, \$23.50 to \$24.

Lead.—Market is stronger. New York: 4.40c. to 4.50c.; St. Louis, 4.30c.

Cement.—Reports from Allentown, Pa., state that the United States Steel Corporation has acquired control of the Atlas Cement Co. It is believed that results favorable to the cement industry will follow. For a long time there has been more or less friction between the Cement Trust, on the one hand, and the universal Cement Company, controlled by the Steel Trust, on the other hand, in relation to prices, freights and distribution of territory. They invaded each other's territory, to the great detriment of both, and a cut-rate war ensued during the last year, which resulted at times in the selling of cement at a price of one-half what it cost to make it.

New Engine Tested.—The new gasoline fire engine recently purchased of the Westinghouse Company and installed at Schenectady, N. Y., drew 427 gallons per minute and threw a stream of water 100 feet in height at the demonstration at Guilderland avenue and Broadway. A stream from the hydrant pressure was less than 20 feet high. It took four men to hold the inch and a quarter engine pipe nozzle used, and these results were attained from a hydrant having only 40 pounds pressure to the square inch. George Moore, of the Westinghouse Company, was on hand to see that the new apparatus did as it was guaranteed to do. In fact, it did better, as the engine is warranted to draw only 400 gallons of water per minute. The cost of operation is very small. It can be run for 24 hours at a cost of \$1.37. It costs to operate one steamer for the same period \$85. Fire Chief Yates expressed himself as satisfied with the efficiency of the apparatus. The engine was built particularly for use in the Bellevue district, where many of the streets are unpaved. It is light and the wheels are equipped with flat, broad band tires so the machine can be pulled through heavy sand with an ordinary team.

Fire Hose.—Owing to the urgent demands of their customers, the Eureka Fire Hose Mfg. Company have decided to open branch offices on or about September 10th on fire department matters in the cities of Minnesota, North and South Dakota, Iowa, Nebraska, New Mexico, Nevada, Montana, Wyoming, Washington and Wisconsin. These branch stores will carry sufficient stock to meet all orders. Patrons will have the advantage of doing business direct with the Eureka Fire Hose Mfg. Company, instead of through agents as heretofore.

Fire Engine Test.—A third size Universal fire engine, built by the Nott Fire Engine Company of Minneapolis, Minn., was tested in Dayton, O., July 1, for the Fire Department, and gave perfect satisfaction, with the following results: Drafting water, 6 ft.; size of pump bore, 4 1/4 in.; size of rod, 1 1/4 in.; stroke, 8 in.; pump plunger displacement, 1.880 gallons; actual discharge, 1.874 gallons per revolution. This pump has less than one (1) per cent. slip.

First Test.—Engine was put on one single line of 2 1/2-inch hose 200 feet long, with a 1 1/4-inch tip at nozzle, with 78 pounds pressure at nozzle, discharging 330 gallons of water per minute, while the pump pressure was 205 pounds, and the steam pressure was 140 pounds, for 20 minutes.

Second Test.—With two lines of 2 1/2-inch hose, each 200 feet in length, with 1 1/4-inch tips, the pressure at the nozzle was 70 pounds on each line, throwing 313 gallons of water per minute, with pump pressure of 120 pounds, and steam pressure of 140 pounds, for 20 minutes.

Third Test.—Connected with a Siamese, two lines of hose, each 100 feet long, with 1 1/4-inch tip at nozzle. Engine was running 334 revolutions per minute, giving a pressure of 88 pounds at the nozzle, pump pressure of 115 pounds, and steam pressure of 135 pounds, throwing 626 gallons of water per minute for 20 minutes.

Fourth Test.—With two lines of 2 1/2-inch hose, each line being 100 feet long, connected to a Siamese with a 1 1/4-inch tip, engine running 400 revolutions per minute, giving a pressure of 68 pounds at the nozzle, and 105 pounds at the pump, steam pressure of 140 pounds, discharging 750 gallons of water per minute. This last test was run for a period of 10 minutes.

Life-Saving Net.—Fire Chief W. L. Walher, of Portsmouth, Va., recently demonstrated his confidence in the Browder life-saving net by jumping into it from a height of fifty feet. The Chief says the fall did not jar him at all, and the dozen firemen that held the rim of the circular net said that because of the exceedingly small strain when his body hit, a few men would be able to save a person's life. The Browder life-saving net is manufactured by the Cory-Paterson Company, Greensfield, O.

Rubber Tires.—A wall hanger of useful information has just been issued on the well-known Firestone Quick-Detachable Demountable Rims. It describes and illustrates the manner of operating and lays especial stress upon several important and trouble-saving features of the Firestone rim. This demountable rim takes quick detachable, stiff base, Clincher tires, hence no lugs or staybolts used. A special feature enables the motorist to change tires as often as desired even after his spare inflated tires are all used up. Such additional changes may be made while the rim remains on the wheel, by using only the quick detachable rims in the regular way, without reference to the demountable feature.

Electric Company Merger.—The Citizens' Electric Light & Power Company, the Southwestern Light & Power Company and the East St. Louis Light & Power Company, all of East St. Louis, Ill., have been consolidated under the title of the last-mentioned company with a capital stock of \$1,000,000. The officers of the consolidated company are: L. C. Haynes, president; H. D. Sexton, first vice-president; M. S. Hipkins, second vice-president; G. L. Estabrook, secretary and treasurer; T. L. Gregory, assistant secretary and treasurer.

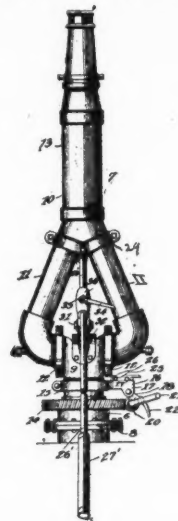
Motor Trucks.—The United States Motor Company, 505 Fifth avenue, New York, N. Y., is building a plant, 150 x 1050 ft., at Detroit, Mich., for the manufacture of Sampson trucks. The company has announced that the entire building will be completed by September

15 and will be put in operation at once. When the plant is completed it will include a drop forge foundry and miscellaneous shops, and it will enable the Alden-Sampson Mfg. Company to produce all of its two-ton trucks in Detroit. Its heavy duty 3, 4 and 5-ton trucks will be made at its Pittsfield plant, where \$125,000 was recently spent for new machinery.

PATENT CLAIMS

965,709. NOZZLE FOR FIRE-FIGHTING APPARATUS. Milton H. Hart, New York, N. Y. Serial No. 482,364.

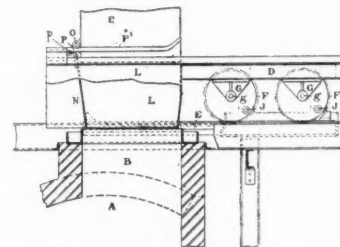
In a nozzle structure of the character set forth, the combination with a supporting member, of a nozzle member journaled



thereon and comprising a delivery element and convergent legs connected thereto, a sectional collar clamped upon both legs, and a directing handle secured to the collar between the legs.

965,718. CHARGING-DOOR FOR REFUSE-DESTRUCTORS AND OTHER FURNACES. Henry Norman Leask, Manchester, Eng. Serial No. 491,989.

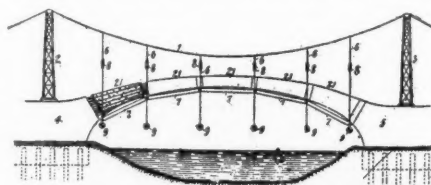
In a device of the class set forth, the combination with a furnace having an upper opening, of a carriage shiftable over the said opening and provided with a chute having a movable end which is automati-



cally elevated and depressed relatively to the furnace opening as the carriage is moved in opposite directions, and a hopper member under which the carriage and chute have movement.

965,358. SYSTEM OF CONCRETE CONSTRUCTION. Philip Aylett, Portsmouth, Va. Serial No. 399,235.

In a system of concrete construction, the combination of supports arranged on opposite sides of a space to be spanned by a



concrete structure; cables mounted on said supports and extending across the space to be spanned by the concrete structure; a centering comprising a plurality of flexibly jointed sections; and means for supporting the centering on cables.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Missouri	Toledo	Aug. 19, 10 a.m.	Repairing Lewis ave. macadam road, Washington township.	C. J. Sanzenbacher, County Audit
Iowa	Spencer	Aug. 19, 8 p.m.	Bldg. cement sidewalks.	R. L. Taylor, City Clerk.
Virginia	Roanoke	Aug. 19, noon	Bldg. granolithic sidewalks; F. L. Gibboney, City Engineer.	W. L. Craft, City Clerk.
Ohio	Dayton	Aug. 19, noon	Cement sidewalks in 17 streets and avenues, gravel 1 street.	J. C. Ely, Dir. Pub. Service.
Pennsylvania	Reading	Aug. 19, 2 p.m.	Bldg. 7,310 ft. of road.	J. W. Hunter, St. Hwy. Comr.
Virginia	Norfolk	Aug. 19, noon	Bldg. granolithic sidewalk on Jefferson st.	F. L. Gibboney, City Engineer.
Ohio	Cleveland	Aug. 19, noon	Grade, curb and pave with brick, number of streets.	A. B. Lea, Dir. Pub. Service.
New York	Troy	Aug. 19, noon	Grade, curb and pave portions of 12th st.	J. M. Riley, Sec'y Bd. Cont. & Sup.
Ohio	Chardon	Aug. 19, noon	Grade and pave with brick 3.04 miles; cost, \$29,094.70.	J. C. Wonders, St. Hwy. Comr.
New Hampshire	Concord	Aug. 19, noon	Grading and macadam surfacing 6,900 lin. ft. Madison.	H. C. Hill, State Engineer.
Illinois	Chicago	Aug. 19, 11 a.m.	Improving sundry streets.	A. F. Keeney, Pres. Bd. Loc. Imp.
Missouri	St. Charles	Aug. 20	Resurfacing 4,410 sq. yds. of macadamized st. with Tarvia or Taroid and repairing 34,225 sq. yds. with macadam, bldg. 1,500 sq. yds. concrete or brick cross walks.	Carr Edwards, City Engineer.
New York	Buffalo	Aug. 20, 11 a.m.	Bldg. and repairing all concrete sidewalks until Dec. 31.	F. G. Ward, Comr. Pub. Works.
Illinois	Carmi	Aug. 20, 2 p.m.	Bldg. gravel or rock road, 3 miles long.	Fred W. Strovel, Town Clerk.
New York	Buffalo	Aug. 20, 11 a.m.	Bldg. and repairing sidewalks.	F. G. Ward, Commissioner.
Indiana	Evansville	Aug. 20, 10 a.m.	Improve Chandler ave., various materials.	S. H. Bartholome, Clk. Bd. Pub. Wks.
Wisconsin	Racine	Aug. 20, 10 a.m.	Grading various streets; 2 contracts.	P. H. Connolly, Chm. Bd. Pub. Wks.
Utah	Ft. Douglas	Aug. 20, 10 a.m.	Bldg. roadways, concrete walks, drains, grading, etc.	K. P. Williams, Constr. O. M.
Ohio	Springfield	Aug. 20, noon	Repaving High st., 1 mile; also paving 1 1-2 miles.	Wm. H. Mahoney, Clk. Bd. Pub. Ser.
Pennsylvania	Clifton Heights	Aug. 22, 8 p.m.	Bldg. sidewalks, curbs, etc.	John Speer, Borough Clerk.
Ohio	Toledo	Aug. 22, 10 a.m.	Grade, drain, macadamize road in Waterville twp.	C. J. Sanzenbacher, County Auditor.
Kentucky	Louisville	Aug. 22, 2 p.m.	Brick paving and improving 16 alleys.	C. Norton, Chm. Bd. Pub. Works.
Ohio	Lockland	Aug. 22, noon	Bldg. artificial stone sidewalk, Dexter ave.	C. E. Troy, Village Clerk.
Florida	Lake City	Aug. 22	Cement sidewalks, about 5 miles.	Board of Bond Trustees.
Illinois	Mattoon	Aug. 22, 1 p.m.	Brick paving on concrete, cement filler, conc. curb and gutter, on N. 19th st.; cost \$13,145.	E. L. James, City Engineer.
New Jersey	Plainfield	Aug. 22, 8 p.m.	Macadam paving, bit. binder, 30,000 sq. yds., 13 streets.	Jas. T. MacMurray, City Clerk.
Kentucky	Paducah	Aug. 23, 3:30 p.m.	Granite curb, 24,720 lin. ft.; concrete gutter, 25,200 lin. ft.; concrete walks, 78,200 sq. ft.; concrete driveways, 5,430 sq. ft.; c-i. drain pipe, 1,000 lin. ft.; sewer, 10-24-in., 1,215 ft., culverts A, B, C and D, also 225 cu. yds. conc. retain. wall.	L. A. Washington, City Engineer.
Kentucky	Louisville	Aug. 23, 2 p.m.	Asphalt paving, vit. block gutter, curb, grade, 4 streets.	R. G. McGrath, Sec'y Bd. Pub. Wks.
Ohio	Premont	Aug. 23, noon	Improve and grade 1.54 miles. cost, \$11,817.40.	J. C. Wonders, St. Hwy. Comr.
Ohio	Portsmouth	Aug. 23, noon	Grade and pave with brick 1 mile of road; cost, \$9,501.87.	J. C. Wonders, St. Hwy. Comr.
Ohio	Cincinnati	Aug. 23, noon	Granite paving and curbing, grading, basins, drains and re- taining walls, Harrison ave.	J. J. Wenner, Clk. Div. Pub. Serv.
Ohio	Bryan	Aug. 24, noon	Improve 1.55 miles; cost, \$11,055.85; 1,000 ft. bitu. and 7,188 water bound macadam.	J. C. Wonders, St. Hwy. Comr.
Ohio	Cleveland	Aug. 24, 11 a.m.	Repairing Detroit road.	F. R. Lander, County Surveyor.
Ohio	Springfield	Aug. 24	Paving 8,000 sq. yds. on College ave.	M. J. Bahin, City Engineer.
Ohio	Nutley	Aug. 24, 9:30 p.m.	Improving number of streets.	John P. Lux, Mayor.
New Jersey	Hoboken	Aug. 24, 4 p.m.	Improving intersection of Hudson and Eleventh sts.	James H. Londrigan, City Clerk.
New York	Brooklyn	Aug. 24, 11 a.m.	Asphalt repaving on concrete, etc., also grading various streets.	Alfred E. Steers, Boro. President.
Florida	Perry	Aug. 25	Paving from 3 to 5 miles of streets, price per sq. yd.	W. E. Battle, Mayor.
New Jersey	Ft. Mott	Aug. 25, 11 a.m.	Bldg. oyster shell road from Harrisonville to fort.	Constr. O. M., Ft. Dupont, Del.
Ohio	Defiance	Aug. 25, noon	Improve 1 mile; water bound macadam; cost, \$5,944.40.	Jas. C. Wonders, St. Hwy. Comr.
Ohio	Cadiz	Aug. 25, noon	Improve 2.10 miles; cost, \$14,847.25; water bound macadam.	Jas. C. Wonders, St. Hwy. Comr.
Ohio	Cincinnati	Aug. 26, noon	Improving Harrison and New Haven road; \$3,000 bond.	Stanley Struble, Pres. Co. Comrs.
Wisconsin	Janesville	Aug. 26, 2 p.m.	Improve portions of 11 streets.	W. F. Carle, Chm. St. Assess. Com.
Utah	Ft. Douglas	Aug. 26	Bldg. roads, walks, catch basins, etc.	K. P. Williams, Constructing O. M.
Indiana	South Bend	Aug. 26	Paving 2 streets with brick; cement curb and walks on four sts.	O. C. Bastian, Pres. Bd. Pub. Wks.
Florida	Palatka	Aug. 26	Bldg. 2 miles of hard-surfaced roads.	R. F. Ensley, County Engineer.
Wisconsin	Superior	Aug. 26, 2 p.m.	Improving number of streets.	P. J. Ekstrand, Chm. Bd. Pub. Wks.
Indiana	Newport	Aug. 26, 2 p.m.	Bldg. gravel road in Eugene township.	H. T. Payne, County Auditor.
Ohio	Toledo	Aug. 26, 10 a.m.	Grading, draining, macadamizing, Pickard road.	C. J. Sanzenbacher, County Auditor.
Pennsylvania	Harrisburg	Aug. 27, noon	Grading 13th st. from Hill to Sycamore st.	W. W. Caldwell, Highway Comr.
Nebraska	Lincoln	Aug. 27, 2 p.m.	Excavating and filling in a county road.	H. E. Wells, County Clerk.
Ohio	Uhrichsville	Aug. 27, noon	Improving 5,700 ft. Deersville road to Carmack's Lane.	N. F. Sproul, Trus. Mill Twp.
New Jersey	Vincetown	Aug. 29	Bldg. stone road.	Earl Thompson, Camden, Engineer.
Minnesota	Carlton	Aug. 29	Repairing State Highway No. 4.	A. R. Norman, County Auditor.
Ohio	Cincinnati	Aug. 30, noon	Bldg. macadam driveways, etc., at New General Hospital.	E. L. Kennedy, Clk. Hosp. Comrs.
Ohio	Columbus	Aug. 30, noon	Improving portion of Columbus and Harrisburg pike.	John Scott, Clk. Co. Comrs.
New Jersey	New Brunswick	Sept. 1, 11 a.m.	Bldg. gravel road, 4,000 ft.	A. W. Bissett, Clk. Co. Comrs.
Ohio	Columbus	Sept. 2, noon	Macadamizing South Davis road.	John Scott, Clk. Co. Comrs.
West Virginia	Huntington	Sept. 2, 1 p.m.	Grading, curbing, paving, etc., portions of sundry streets.	John Coon, Comr. of Streets.
Ohio	Columbus	Sept. 3	Furn. 10,000 gals. Tarvia, 3,200 tons crushed limestone, and 1,000 tons screenings; excav. 13,836 cu. yds.	F. M. Sayre, County Auditor.
Indiana	Marion	Sept. 5	Bldg. macadam road in Franklin township.	A. Y. Stout, County Auditor.
Indiana	Williamsport	Sept. 5, 1 p.m.	Bldg. gravel roads in Pine and Steuben townships.	R. L. Winks, County Auditor.
Indiana	Jeffersonville	Sept. 5, 10 a.m.	Bldg. 3,607 lin. ft. gravel road in Monroe township.	County Auditor.
Indiana	Tipton	Sept. 5, 10 a.m.	Bldg. gravel road in Cicero township.	J. F. Barlow, County Auditor.
Indiana	Decatur	Sept. 5, 10 a.m.	Bldg. macadam road in Preble township.	County Auditor.
Indiana	Vernon	Sept. 5, 11 a.m.	Bldg. 2 1-2 miles pike road in Bigger township.	T. L. Campbell, County Auditor.
Indiana	Rushville	Sept. 5, 2 p.m.	Bldg. macadam road on township line also Orange township.	J. M. Stone, County Auditor.
Indiana	Vincennes	Sept. 6, 2 p.m.	Bldg. 1,600 lin. ft. gravel road in Vincennes township.	County Auditor.
Indiana	Wabash	Sept. 6, 2 p.m.	Bldg. gravel road in Waltz, macadam in Chester township.	County Auditor.
Florida	West Palm Beach	Sept. 6, noon	Furn. 6,000 cu. yds. live oyster shell at 2 points.	Board of County Commissioners.
New Jersey	New Brunswick	Sept. 6, 11 a.m.	Bldg. Kingston and Aqueduct road.	Director Bd. Freeholders.
Indiana	Lafayette	Sept. 7, 9 a.m.	Constructing 3 gravel roads.	J. P. Foresman, County Auditor.
Indiana	Lebanon	Sept. 8, 1 p.m.	Bldg. 2 1-2 miles gravel road in Sugar township.	County Auditor.
Ohio	Euclid	Sept. 12, noon	Paving and improving Lawnview ave.	N. J. Brewer, Village Clerk.
Indiana	Vernon	Sept. 15, 11 a.m.	Bldg. 3 miles gravel road in Vernon township.	County Auditor.
California	Hermosa Beach	Sept. 23	Warrenite paving, on 5-in. bituminous concrete base, \$60,000.	E. McCoskey, City Clerk.
SEWERAGE				
Ohio	Dayton	Aug. 19, noon	Bldg. 4 storm water sewers: 450 ft. 3.5 ft. concrete sewer; 410 ft. 20-in. pipe, 1,520 ft. 18-in., 1,130 ft. 15-in., 1,625 ft. 12-in. pipe, etc., trench 0 to 10 ft. deep.	J. C. Ely, Dir. Pub. Service.
Indiana	Marion	Aug. 19	Constructing North Marion sewer; also others later.	Pres. Willson, Bd. of Pub. Works.
New York	Troy	Aug. 19	Bldg. sewer on several streets.	J. M. Riley, Sec'y Bd. Cont. & Sup.
Indiana	Indianapolis	Aug. 19, 10 a.m.	Bldg. 3 local sewers, etc., in alleys.	H. W. Klausmann, City Engineer.
Iowa	Ft. Madison	Aug. 19, 4 p.m.	Bldg. sewers in number of streets; bond, \$5,000.	L. G. Kile, City Clerk.
Wisconsin	Racine	Aug. 20, 10 a.m.	Bldg. number of sewers.	P. H. Connolly, City Engineer.
Oregon	Corvallis	Aug. 20	Bldg. 3 miles special design rein. conc. sewer; cost, \$162,600.	City Engineer.
Massachusetts	Greenfield	Aug. 20, 2 p.m.	Bldg. inter. and outfall conc. and pipe sewer, 24 to 30-in. diam.; cost, \$35,000; H. G. Chapin, Town Engineer.	Robt. E. Pray, Chm. Bd. Selectmen.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
SEWERAGE (Continued)				
Iowa	Ft. Madison	Aug. 20	Bldg. 10,000 ft. sanitary sewer; cost, \$8,000.	M. E. Bannon, City Engineer.
Texas	Ft. Crockett	Aug. 22, 2 p.m.	Bldg. sanitary sewer system and pumping plant.	Capt. P. Whitworth, Q. M.
Iowa	Shenandoah	Aug. 22	Constructing sewers in various streets.	C. M. Conway, City Clerk.
Montana	Miles City	Aug. 22, 3 p.m.	Bldg. main and outfall sewers, sewage pumping and disposal plants; furn. and erect fully equipped air-lift system for sewage pumping, also for improving water and light systems.	Geo. W. Farr, Mayor.
North Dakota	Devil's Lake	Aug. 22	Bldg. lateral sewers.	S. C. Jones, City Auditor.
Wisconsin	Superior	Aug. 22	Bldg. sewers in two streets.	P. J. Ekstrand, Chm. Bd. Pub. Wks.
Nebraska	North Platte	Aug. 23	Bldg. sewer extensions; cost, \$4,000.	Paul Meyer, City Engineer.
Ohio	Cleveland Hgts.	Aug. 23	Constructing pipe sewers.	H. H. Canfield, Village Clerk.
Iowa	Indianola	Aug. 23, 7:30 p.m.	Bldg. sanitary sewers: 6,447 ft. 10-in., 12,087 ft. 8-in. and 1,258 ft. 6-in. standard vit. sewer pipe; 33 common and 13 drop manholes; 9 flush tank siphons, set in manholes; 800 house connections, 328 manhole stops, 1/2x10-in. round iron.	A. H. Gilliland, City Engineer.
Virginia	Norfolk	Aug. 23, noon	Bldg. two sewers.	W. L. Craft, City Clerk.
Saskatchewan	Estevan	Aug. 24, 8 p.m.	Furnishing sewer pipe, also laying storm sewers.	Chipman & Powers, Engrs., W'n'p'g.
Kentucky	Georgetown	Aug. 25	Bldg. 1,035 ft. 42 and 36-in. rein. conc. storm water drain; A. Potter, N. Y. City, Engineer.	J. S. Montgomery, Mayor.
New York	Forest Hills	Aug. 25	Bldg. 1,000 ft. 48-in. and 1,800 ft. 42-in. storm water drain, brick, concrete, rein. concrete or lock joint pipe.	Sage Foundation Homes Co.
Ohio	Galion	Aug. 25, noon	Bldg. rein. concrete sewer in Dist. No. 7; sanitary lateral sewers in Dist. No. 5.	H. Hocker, Dir. Pub. Service.
Ohio	Greenfield	Aug. 25, noon	Bldg. sanitary sewer and laterals.	E. M. Connor, Village Clerk.
Wisconsin	Janesville	Aug. 26, 2 p.m.	Improve three sewerage districts.	W. F. Carle, Chm. St. Assess. Com.
Ohio	Lakewood	Aug. 29, noon	Bldg. sewers in 2 streets.	B. M. Cook, Village Clerk.
Dist. of Col'bia	Washington	Aug. 29, 2 p.m.	Bldg. sewers.	C. H. Rudolph, Chm. Comrs.
Wisconsin	Waupaca	Aug. 29, 6 p.m.	Bldg. 1,825 ft. 12-in. pipe sewers, 13 manholes, etc.	Jeff Woodnorth, City Clerk.
Wisconsin	Algona	Sept. 1	Bldg. vit. pipe sewer; cost, \$4,000.	Wm. Wiseman, Jr., City Clerk.
Ohio	Newburgh Hgts.	Sept. 3, noon	Bldg. sewers in number of streets.	A. W. Shatts, Village Clerk.
South Dakota	Sioux Falls	Sept. 6, 9 a.m.	Bldg. 66,000 ft. 8 to 36-in. sewer; \$10,000 check.	Lewis Larson, City Auditor.
Indiana	New Castle	Sept. 15, 7:30 p.m.	Bldg. sanitary sewer.	L. M. Johnson, City Clerk.
Pennsylvania	West View	Oct. 1, noon	Bldg. main sewer and disposal plant, plans by Trimble & Miller, Fourth ave., Pittsburgh.	H. L. Donaldson, Boro. Sec'y.
WATER SUPPLY				
Ohio	Steubenville	Aug. 19, 1 p.m.	Bldg. conc. reservoir at County Infirmary.	S. M. Floyd, Clerk Co. Comrs.
Massachusetts	Dalton	Aug. 19	Improving water works; cost, \$30,000; new supply source.	John Hardeman, Supt. Water Works.
Ohio	Columbus	Aug. 19, noon	Furnishing 36,000 lbs. pig lead and 108,000 lbs. lead pipe.	H. H. Solton, Dir. Pub. Service.
Pennsylvania	Erie	Aug. 19, 3 p.m.	Furn. lubricants at pumping station for 1 year from Sept. 1.	Geo. C. Gensheimer, Sec'y W.W. C'sr.
Illinois	Franklin Park	Aug. 20	Furn. machinery for pumping plant; H. I. Emerson, Engineer.	R. J. Welsh, Village Clerk.
Iowa	Tama	Aug. 22	Furn. and lay. 2,400 ft. 4-in. water main, 4 hydrants, etc.	City Clerk.
Montana	Miles City	Aug. 22, 3 p.m.	Furn. mat. and extend. w. w., light and sewer systems.	J. E. Farnum, City Clerk.
Ohio	Euclid	Aug. 22, noon	Bldg. 6-in. water main in Lawnview ave.	Nelson J. Brewer, Village Clerk.
Washington	Ft. George Wright	Aug. 22, 11 a.m.	Sinking 10-in. tubular well.	Lieut. A. L. Sneed, Q. M.
Ohio	Cleveland Hgts.	Aug. 23, noon	Laying mains in 5 streets.	H. H. Canfield, Village Clerk.
Indiana	Rushville	Aug. 23, noon	Pumping machinery, tanks and tower.	A. T. Mahan, Supt. Water Plant.
Ohio	Barnesville	Aug. 23, noon	Furn. 750 ft. 4-in., 5,000 ft. 6-in., 1,400 ft. 8-in. water pipe, 8 hydrants, 2 4-in., 2 6-in. and 1 8-in. valves; also laying 6,550 ft. water pipe.	E. Wilson, Pres. Bd. Pub. Affairs.
New York	Keeseville	Aug. 25, 7 p.m.	Furn. 450 pieces 10-in. B. & S. c-i pipe, class C, 850 lbs. per length; 11,000 lbs. pig lead, 1 ton specials, 1 stand. m. h. frame and cover, 22-24-in.; two 10-in. and one 4-in. gate valves and boxes; one 10x24-in. copper strainer; laying 5,300 ft. 10-in. pipe, etc.; rock excav. granite in reservoir, 1,604 cu. yds.; concrete in reservoir, 345 cu. yds., in manhole, 5.28 cu. yds.; 3,200 brick in manhole; 250 lbs. sundry iron work; W. G. Stone, Mann Bldg., Utica, Engr.	J. B. Mace, Pres. Water Bd.
Manitoba	Winnipeg	Aug. 25, 11 a.m.	Furn. mach. to drill in limestone wells 60 to 100 ft. deep.	H. N. Rutan, City Engineer.
New Jersey	High Bridge	Aug. 25	Bldg. addition to w. w.: 3 miles gravity main, reservoir and enlarging distributing reservoir, etc.	L. H. Dorlan, Boro. Clerk.
Kentucky	Georgetown	Aug. 25	Bldg. water purification plant; Alex Potter, Con. Engineer.	J. S. Montgomery, Mayor.
New York	Canajoharie	Aug. 25, 2 p.m.	Furn. and lay 10 miles 8, 10 and 12-in. wood-stave pipe, 356 tons c-i pipe, 5 tons specials, distributing reservoirs, etc.; Vrooman and Perry, Engineers.	Municipal Board.
Kentucky	Louisville	Aug. 26, 2 p.m.	Erecting 48 fire hydrants at specified points.	R. G. McGrath, Sec'y Bd. Pub. Wks.
Ohio	Toledo	Aug. 29, noon	Bldg. intake crib improvement; cost, \$7,500.	G. W. Tonson, Ch. Engr., Bd. P. Ser
Wyoming	Lovell	Aug. 29, 1 p.m.	Bldg. 60,000-gal. wood or steel tank on 40-ft. steel tower.	W. T. Lovell, Engr.-in-Charge.
Utah	Provo	Aug. 29, 3 p.m.	Changing water mains; cost, \$90,000.	L. C. Kelsey, Consulting Engineer.
Alabama	Opelika	Aug. 31, noon	Furnishing all material and bldg. complete water works and electric light system; J. B. McGarry Co., Empire Bldg., Atlanta, Ga., Engineers.	Mayor and Council.
Michigan	Manistee	Sept. 1, 2 p.m.	Bldg. 12-in. c-i pipe river crossing, ready for use.	T. J. Elton, Sec'y Water Board.
North Carolina	Roxboro	Sept. 1	Water works improvements, \$2,500, inc. 1000 ft. pipe extension	N. Lunford, Mayor.
Indiana	Connersville	Sept. 1, 2 p.m.	Bldg. pumping station, and other bldgs., reservoir, removing old machinery, laying water pipe, etc., drill wells, furn. vert. motors, elec. cent. unit, turbine generator unit with surface condenser, etc., and tubular boilers.	B. Marvin, Cons. Engr., Frankfort.
Manitoba	Dauphin	Sept. 1	Furn. c-i pipe and specials; fire hydrants and valves, sewer and wood-stave pipe; bldg. dam and gate house, laying 9-10 miles gravity main, also sewer and water pipe; Chipman and Power Engineers, Winnipeg and Toronto.	J. W. Johnston, Sec'y-Treas.
Nebraska	Cozad	Sept. 2, 6 p.m.	Bldg. water works system; as whole or in parts.	Hershey S. Welch, C.E., No. Platte.
North Dakota	Grand Forks	Sept. 5, 3 p.m.	Reconstructing stone sand filter, constructing rapid sand filter.	C. J. Evanson, City Auditor.
BRIDGES				
Ohio	Cincinnati	Aug. 19, noon	Constructing concrete bridge.	Stanley Struble, Pres. Co. Comrs.
Pennsylvania	Butler	Aug. 19	Constructing several bridges for county.	W. B. Scott, Clk. Co. Comrs.
Indiana	Rushville	Aug. 20, 2 p.m.	Bldg. 55-ft. concrete arch in Wash. twp.; driving piles.	J. M. Stone, County Auditor.
Ohio	Springfield	Aug. 20, noon	Bldg. bridge, East High st.; cost, \$18,000.	Wm. H. Mahoney, Clk. Bd. Pub. Ser.
Pennsylvania	Beaver	Aug. 20, 10 a.m.	Bldg. concr. bridge over Crow's river.	S. F. Ewing, Chm. Co. Comrs.
New Jersey	Somerville	Aug. 20	Bldg. number of bridges, mostly in Bernards township.	County Board of Freeholders.
Pennsylvania	Beaver	Aug. 20, 10 a.m.	Bldg. concrete bridge over Crow's river, Sewickley township.	S. F. Ewing, Chm. Co. Comrs.
Colorado	Denver	Aug. 20, noon	Bldg. 600 ft. span rein. conc. bridge over river near San Luis.	C. W. Comstock, State Engineer.
Pennsylvania	Waynesburg	Aug. 21	Bldg. conc. bridge across Smith Creek road.	County Commissioners.
Illinois	Minooka	Aug. 22, 2 p.m.	Bldg. rein. conc. bridge, Troy township.	John Dollinger, Township Clerk.
Iowa	Ft. Dodge	Aug. 22, 7:30 p.m.	Bldg. metal viaduct, 823 ft. long, sub. and super. complete; also remove old and erect new 330 ft. steel superstructure.	S. J. Bennett, Mayor.
California	San José	Aug. 22, 11 a.m.	Bldg. rein. concrete bridge over gulch on Dougherty road.	H. M. Ayer, Chm. Co. Comrs.
New York	Oswego	Aug. 23, noon	Bldg. bridge over Oswego Canal; cost, \$39,735.	F. M. Williams, State Engr., Albany.
Indiana	Noblesville	Aug. 23, 10 a.m.	Bldg. and repairing several bridges and culverts.	Geo. Griffin, County Auditor.
Pennsylvania	Pottstown	Aug. 24, 11 a.m.	Bldg. concrete retaining wall along W. High st.	Jas. Kreuson, Chm. Co. Comrs. Nrstrn
Pennsylvania	York	Aug. 25, 11 a.m.	Removal of present College ave. bridge and erection of entire new one or alteration and repair of present one.	Wm. H. Strine, County Clerk.
Ohio	Athens	Aug. 25	Standpipe, two 150 h.p. hori. tubular boilers and steam piping for improving water supply system at State Hospital.	Dr. O. O. Fordyce, State Hospital.
Pennsylvania	Uniontown	Aug. 25	Bldg. 70-ft. steel span, 14-ft. rdwy., also for masonry work.	J. S. Langley, Chm. Co. Comrs.
Indiana	Shelbyville	Aug. 29, 10 a.m.	Constructing 4 bridges.	G. B. Huntington, County Auditor.
Montreal	Quebec	Sept. 1, noon	Bldg. Quebec bridge superstructure; \$500,000 check.	L. K. Jones, Sec'y Dept. Rys. & Can.
Ohio	Cincinnati	Sept. 2, noon	Bldg. bridges and approaches, Briery creek road, Green twp.	Fred Dreihis, Clk. Co. Comrs.
South Carolina	Gaffney	Sept. 5	Rebldg. steel approaches on concrete base, repair bridge, etc.	E. Felix Lipscomb, County Superv.
Kansas	Leavenworth	Sept. 5, noon	Bldg. two bridges and replacing Bridge No. 20.	J. W. Niehaus, County Clerk.
North Dakota	Williston	Sept. 7, 10 a.m.	Bldg. two 30, two 25, and three 20-ft. bridges, 16-ft. rdwy., etc.	Board of County Comrs.
Maine	Augusta	Sept. 9, noon	Bldg. 762-ft. bridge over St. Johns river at Van Buren.	State Comr. of Highways.
North Dakota	Fargo	Sept. 9, noon	Bldg. 46 ft. 30 ft., and four 20-ft. bridges, steel culvert, and repair 60-ft. bridge.	Arthur C. Lewis, County Auditor.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
LIGHTING AND POWER				
Montana.....	Miles City.....	Aug. 22, 3 p.m.	Furn. material and extending light, water and sewer systems.	J. E. Farnum, City Clerk.
Saskatchewan..	Estevan.....	Aug. 24, 8 p.m.	Power house, 2 return tubular boilers, high-speed steam engine, electric lighting system; also sewers.	J. G. Hastings, Mayor.
Ohio.....	Cleveland.....	Aug. 24, 2 p.m.	Electric current for lighting and power, also steam for heating new Court House for 6, 8 and 10 years.	Court House Bldg. Comm.
Michigan.....	Grand Rapids...	Aug. 25, 8 p.m.	Furn. and setting two 300 k.w. turbo generator sets, two surface condensers, one Turbo-exciter set and 1 motor gen. exciter	S. A. Freshney, Sec'y Bd. Pub. Wks.
Ohio.....	Sandusky.....	Aug. 29, noon.	Lighting streets, alleys, parks, etc., for 10 years.	John Bing, Dir. Pub. Service
Alabama.....	Opelika.....	Aug. 31, noon.	Furn. material and bldg. water works and elec. light system.	Mayor and Council.
Manitoba.....	Winnipeg.....	Sept. 1, noon.	Furn. and installing 46,000 ft., 13,000-volt, 3-core cable.	M. Peterson, Sec'y Bd. Control.
MISCELLANEOUS				
Ohio.....	Cincinnati.....	Aug. 19, noon.	Furn. two-horse service ladder truck.	E. G. Prior, Sec'y Bd. Safety.
New York.....	Buffalo.....	Aug. 19, 11 a.m.	Masonry and carpentry work on new brick police station and patrol barn in Precinct No. 12.	F. G. Ward, Comr. Public Works.
New York.....	Brooklyn.....	Aug. 22, noon.	Preparing for and bldg. exterior pier, etc., mouth of Whale Crk.	Dept. Docks, N. Y. City.
Pennsylvania..	McKeesport.....	Aug. 22, 4 p.m.	Repairs to city garbage furnace; \$1,000 bond.	C. E. Soles, City Comptroller.
Florida.....	Jacksonville...	Aug. 24.....	Dredging and removal of rock in Biscayne Bay.	Geo. R. Spalding, Capt. U. S. Engrs.
New York.....	Ithaca.....	Aug. 25, 3 p.m.	Bldg. additions to N. Y. State Veterinary College, Cornell University, (see "proposals.")	E. L. Williams, Treas.
California.....	Oakland.....	Aug. 25, 2 p.m.	Bldg. fountain in Lakeside Park.	F. B. Ware, State Architect.
Massachusetts..	Boston.....	Aug. 30, noon.	Bldg. Sec. 2, Beacon Hill tunnel, inc. 3 platform stations.	H. F. Vogt, Sec'y Park Commission.
Dist. of Col'bia.	Washington.....	Sept. 1, 2 p.m.	Furn. straight double 85-gal. tank chemical engine.	Boston Transit Commission.
Massachusetts..	Boston.....	Sept. 2, noon.	Bldg. stone wharf, Pier No. 6, South Boston, 1,200 ft. long, 300 ft. wide, inc. 414,600 cu. yds. dredging, 274,600 cu. yds. fill; furn. 94,000 cu. yds. gravel, 40,200 cu. yds. rip-rap and stone ballast, 1,295 spruce piles, 730 cu. yds. concrete, 45,750 cu. yds. stone masonry below and 14,100 above low water, 95 lin. ft. bulkhead, 2,700 lin. ft. fenders on face of wall.	C. H. Rudolph, Chm. Comrs.
Dist. of Col'bia.	Washington.....	Sept. 3, noon.	Furn. and placing rip-rap or cobblestone on seawall Anacosta riv.	State Bd. Harbor Comrs.
New York.....	Albany.....	Sept. 6, 3 p.m.	Bldg. new fire-truck house at Marshall st. and Del. ave.	W. C. Langfill, Col. U. S. Engrs.
Oklahoma.....	Tulsa.....	Sept. 6.....	Sketch plans, etc., for \$200,000 County Court House and Jail.	M. T. Reynolds, Arch., 100 State st.
Louisiana.....	New Orleans....	Sept. 19, 11 a.m.	Bldg. rein. concrete sea wall on pile foundation, 2,700 ft. long and 14 ft. high, Lake Pontchartrain, also for filling in with earth dredged from lake, 400,000 cu. yds. behind wall.	County Clerk, Tulsa County.
Indiana.....	Huntington.....	Sept. 19, 10 a.m.	Improving county jail.	C. R. Kennedy, City Comptroller.
				J. W. Weaver, County Auditor.

STREET IMPROVEMENTS

Birmingham, Ala.—Board of Revenue has taken steps to provide for the erection of mile posts and index boards along county roads.

Birmingham, Ala.—Board of Revenue is preparing plans for construction of several county roads; \$12,000 available.

Birmingham, Ala.—Council is considering ordinances for paving four streets with bitulithic.

Berkeley, Cal.—Grove st. will be widened at cost of \$11,000.

Haywards, Cal.—Preliminary steps toward ordering permanent paving for all unpaved streets in this city; cost in neighborhood of \$500,000, have been taken by Council.—T. S. Gray, Town Attorney.

Martinez, Cal.—Issue for bonds to the amount of \$1,460,000 for good roads for Contra Costa County has been defeated.

Oakland, Cal.—Council has passed ordinance appropriating \$12,000 for improving north half of Twelfth st. dam and \$2,000 for improving south side of Grand ave.

Pomona, Cal.—Board of Trustees is considering repairing of asphaltum on 2d st.

Santa Clara, Cal.—Civil Engineer C. E. Moore has presented specifications for proposed street improvements.

Hartford, Conn.—Plans for improvement of State roads have been received by the State Highway Commissioner as follows: From A. B. Alderson, Engineer, 12,500 lin. ft. in town of Farmington; from Alexander Cahn, Engineer, 12,450 lin. ft. on the main road from Waterbury to Wolcott, in the city of Waterbury; from G. C. Ham, Engineer, 10,000 lin. ft. on the Middlebury Road, in the Boro. of Naugatuck; from A. S. Brainard, Division Engineer, about 8,000 lin. ft. on Hartford, Willimantic Turnpike, in town of Manchester.

Denver, Col.—No bids were submitted for crosswalks and grading on Capitol Hill, Improvement District No. 6.

Washington, D. C.—Col. Cosby has asked \$100,000 for grading and macadamizing roads in West Potomac Park.

Decatur, Ill.—Council has passed ordinances for paving of North College st., block on Division st., paving of East Leaf-land ave. and two blocks each on Warren and Broadway.

La Salle, Ill.—Paving of Canal st., cost \$16,000, is being considered.

Peoria, Ill.—City has ordered improvement of following streets with brick: Franklin st., estimated cost \$19,415; N. Washington st., \$14,530; Webster st., \$26,912; and Smith st., \$6,920.

Urbana, Ill.—City Engineer Danely, of Champaign, is preparing plans for pavement in Washington st.; cost, \$27,000; park will be constructed in center.

Evansville, Ind.—Board of Public Works has ordered paving of Monroe and Jackson aves.

Logansport, Ind.—City proposes to pave Broadway; cost \$100,000 to \$150,000; material not yet decided upon.—H. H. Thompson, City Engineer.

Logansport, Ind.—Board of Public Works has approved plans and specifications for paving of Broadway.

Muncie, Ind.—County Commissioners have approved plans and specifications for paving of Wysox st.; cost \$26,333.

New Albany, Ind.—Board of Public Works will advertise at once for construction of granitoid sidewalks on both sides of West Market st.

Silver Grove, Ind.—Board of Trustees has rejected bids on the proposed improvement of Indiana ave. and Oak st. with granitoid pavement and combined curbs and gutters. W. O. Sweeney, Jeffersonville, was only bidder, \$1.61 and \$1.73.

Sullivan, Ind.—Cass township has voted to build Cartly stone road and defeated the Chambers road by two votes.

Atlantic, Ia.—Cost of proposed paving is as follows: Division A, \$23,030; B, \$26,671; C, \$12,988; D, \$20,195; total, \$105,673; work consists of 42 blocks of paving, including curbing, and bituminous paving aggregating 44,366 yds.—Iowa Engineering Co., Clinton, Engineer.

Clinton, Ia.—Plans are being prepared for constructing pavement in 3d ave.—R. C. Hart, City Engineer; W. E. Hayes, City Clerk.

Council Bluffs, Ia.—Broadway is to be paved; City Engineer S. L. Etnyre proposes that brick be laid on present granite block with sand cushion; Main st. is also to be improved and Vine st. extended to Main st.

Davenport, Ia.—Paving of 2d st. with asphalt is being considered; estimated cost \$12,549.

Dubuque, Ia.—Council has decided to pave Bluff st. with brick.

Grinnell, Ia.—City is considering three blocks of bitulithic paving on 7th ave.—W. M. Beard, City Engineer.

Iowa City, Ia.—Bids will soon be received by City Engineer C. T. Dey for 25 blocks of bitulithic paving.

Coffeyville, Kan.—Plans have been prepared by City Engineer A. C. Gillam for four to five blocks of vit. brick paving; 10 to 12 blocks of brick paving is being considered.—Rosa Bell, City Clerk.

Independence, Kan.—City Engineer A. D. Stivers has prepared plans for about 35 blocks of brick paving.—T. S. Underwood, City Clerk.

Wichita, Kan.—Sedgwick County is planning to build nine miles of sand-clay road.

Pineville, Ky.—City will lay concrete sidewalks on Cherry st.; N. R. Patterson, Mayor protem., will receive bids.—F. A. Heath, City Clerk.

Amite City, La.—The State Engineer, after survey of the west swamp road, has estimated probable cost of two miles of model road at \$7,000.

Whitecastle, La.—Council has asked bids for paving Main st.

BillERICA, Mass.—Town has voted \$1,450 for sidewalk on Fordway bridge.

Detroit, Mich.—Council has directed Department of Public Works to advertise for proposals for paving Coplin ave. with cedar blocks on concrete foundation, with Medina

Berea or other approved curbing; cost \$15,-840; Watson st., same as above, \$9,250; also alley 15 ft. wide, with vit. brick, \$1,000.—J. J. Haarer, Commissioner.

Evart, Mich.—Osceola Township has voted \$25,000 for building good roads and several adjoining townships are about to vote on similar propositions.

Ionia, Mich.—Ionia and Berlin Bellevue Association has been organized for improving five miles of Bellevue road from Ionia south to Tremayne's Corners.—A. P. Loomis, President.

Saginaw, Mich.—City will have nearly \$20,000 to spend on walks this year.

Bay St. Louis, Miss.—Hancock County Board of Supervisors will consider \$125,000 bond issue for road improvements.

Gulfport, Miss.—All bids received for furnishing material and constructing approximately 13,000 sq. yds. of cement sidewalks have been rejected; lowest bidders were C. Taten & Co., of New Orleans, \$13,640.—H. D. Shaw, City Engineer.

Hazlehurst, Miss.—Copiah County Supervisors will issue \$75,000 of bonds for road construction in district No. 1.

St. Joseph, Mo.—Council has passed ordinance to pave alley with Hassam; also is considering paving of two streets and sidewalks in two streets.

Asbury Park, N. J.—Mayor Appleby has exhibited to Council plans for proposed crossing of the Ocean blvd. over Wesley Lake; the State Highway Commission has appropriated \$5,600 to help defray the cost of the improvement, and Asbury Park and Ocean Grove will each add \$2,000 to this amount.

Elizabeth, N. J.—Property owners on North ave. have petitioned for pavement.

Glassboro, N. J.—Township Committee has passed cement paving ordinance on third reading.

Hightstown, N. J.—Stockton st. will be macadamized at cost of \$3,000.—John R. Shangle, Mayor.

Mt. Holly, N. J.—Citizens of Pemberton Township have voted \$15,000 bonds for constructing Brown's Mills and Lakehurst rds.

New Brunswick, N. J.—Plans of County Engineer Simons for improving Spotswood-Texas road have been approved.

Woodbury, N. J.—County Road Committee, Engineer Cattell has apportioned State appropriation of \$10,000 to different townships.

Newbern, N. C.—Citizens will vote Sept. 3 on \$50,000 bonds for paving Pollock, Craven, Griffith and other streets.—F. T. Patterson, City Engineer.

Dickson, N. D.—Council has ordered construction of number of sidewalks.

Akron, O.—Bid of Green & Co., Ravenna of \$3,200 for resurfacing West Market st. wall has been rejected; new bids asked.

Bedford, O.—Bids will be received Aug. 20 by Board of Trustees of Bedford Township for \$9,000 paving bonds.—E. J. Caskey, Town Clerk.

Cincinnati, O.—New Hospital Commissioners have rejected all bids for construc-

Butler, Pa.—Paving Washington st., to F. E. McQuiston, \$1.43 per sq. yd.; Porter National brick to be used; Lookout ave., to Norman J. Boyer, \$1.10 per sq. yd.; DuBois and Butler brick to be used; Beckert ave. and Sullivan ave., to Tony Morelli, \$1.10 per sq. yd.; DuBois and Butler brick to be used; Jackson st., to Norman J. Boyer, \$1.23 per sq. yd.; DuBois and Butler brick to be used.

Phoenixville, Pa.—Furnishing of material, hauling, and the laying of brick for East Main st. paving, brick, to Pine Grove Co., \$18.83 per thousand; cement, to C. I. Fitzgerald, \$1.16 delivered on work; to same, for stone, \$1.24 per ton on work, and for bar sand, \$1.15 delivered; to J. C. Pennypacker, for hauling brick from the car to the place where the work is done, \$1.27 per thousand.

Pittsburg, Pa.—Road work as follows: Duff City and Campmeeting road, to Foley Bros., \$57,430; Perryville extension No. 4, to Henry Hileman, \$27,982, and Troy Hill extension No. 2, to Neelen & Daly, \$11,141.

Reading, Pa.—Paving Spring st., from Nicolls st. to 6th st. and for drainage apertures, to Fehr & O'Rourke, \$10,-285.95; paving streets with vit. blocks, of the Mack Manufacturing Co. make, to Fehr & O'Rourke, \$59,890.42; to John Weidner, \$4,331.77, for paving with granite block Greenwich st.

Reading, Pa.—Paving, to Fehr & O'Rourke, city, 27,550 sq. yds. vit. block paving, including excavation and concrete base complete, \$2.07 per sq. yd.; total cost, \$59,890; Mack block will be used; John E. Weidner, city, secured contract for 1,850 sq. yds. granite block paving, at \$2.33 per sq. yd.; total, \$4,332.—Edmund B. Ulrich, City Engineer.

Providence, R. I.—Grading, surfacing, curbing and constructing sidewalks on Barrington Parkway, in East Providence, to A. J. Tomassello, 69 Gibson st., Dorchester, \$58,357.

Mountain View, Tenn.—To Geo. W. West for paving portion of Dandridge pike and East Main ave., 244c. per lin. ft.

Norfolk, Va.—North Carolina Granite Co., 2,000 ft. straight curbing at 40c. per ft.

Wytheville, Va.—To Edmund Pendleton, city, \$13,211 to rebuild section of 3 1/4 miles of old macadam road east of Wytheville.

Seattle, Wash.—Street improvements, Lowman Drive and other streets, to John Kalberg, \$17,072; California ave. and other streets, grading to John Kalberg, \$12,936; West Rose st. and other streets, grading, to N. McKinnon, \$70,014; Water st. and other streets, grading, to Andrew Peterson & Co., \$84,424; West 6th st. and other streets, concrete walks, to W. H. Smith, \$6,581.

Spokane, Wash.—Paving McClellan st., to John Fife, \$10,000; maintenance \$500 for five years; to same, laying sewer in alley between Sharp and Boone ayes, Standard to Superior st., \$6,444, estimate \$6,797; to Colley & Ferguson, sidewalk on Arthur st., \$1,760, estimate \$1,800; to Mitchell Bros., grading and sidewalk Bridgeport ave., \$3,393, estimate \$3,480; to Naylor & Norlin, sidewalk and recurring Maxwell ave., \$2,034, estimate \$2,100; to Massie Bros. & Long, grading and sidewalk Normandy st., \$16,157, estimate \$19,200; to Mitchell Bros., grading and sidewalk Pacific ave., \$8,160, estimate \$8,700; to L. B. Handley, grading and sidewalk Riverside ave., \$6,200, estimate \$6,900; to Mitchell Bros., sidewalk Spruce st., \$990, estimate \$915; to Naylor & Norlin, grading and sidewalk Scott st., \$1,634, estimate \$1,450; to James C. Broad, sewer on 10th ave., \$2,065, estimate \$2,430.

Tacoma, Wash.—To Anton Warter, for the completion of large cement sidewalk district in north end, \$6,843.

Walla Walla, Wash.—Paving East Alder st., to Pacific Paving Co., \$1.87 per sq. yd.

Terra Alta, W. Va.—To W. Bateson & Co., Wheeling, approximately \$40,000 for 36,000 sq. ft. concrete sidewalk and curbing, 10,000 sq. yds. brick paving, 5,000 ft. 12-in. sewer, 6,000 cu. yds. excavation.—T. M. Attleboro, Engineer in Charge.

Sparta, Wis.—Brick paving on Water st., La Crosse Stone Co., \$10,394; C. W. Johnson, city, \$9,222; Otis Avel & Co., \$8,275; Sweeney Bros., Reedsburg, \$8,103.

Lacombe, Alta., Can.—Construction of concrete sidewalks, to Davidson & Westaway, Calgary, at 23 1/2c. per sq. ft.; curb and gutter at 68c. per lin. ft.; other bids, for walks, 24c., 35c. and 36c.; for curb and gutter, 60c. and 75c.

BIDS RECEIVED

Fairmount, Cal.—Constructing foothill boulevard from Fairmount toward Glendora: Rise, Cave & Trenzen, \$63,381; A. C. St. John, \$63,540; H. H. Rogers, \$74,409.

Stockton, Cal.—Bids of Cotton Bros. of \$25,059, for paving Mariposa road, and \$29,-212.22 for paving Copperopolis road, taken

under advisement; distance of the former is 5.26 mi., and of the latter 6.37 mi.

Ft. Wayne, Ind.—Bids for street paving, Harrison, Woodland ave. to Kilea, Tripp & Son, block, \$6.56 per lin. ft.; Barber Asphalt Co., asphalt, \$6.64; Moellering Construction Co., block, \$6.90; preliminary order for asphalt; Hoagland ave. at Leith st., John Brooks, tarvia, \$4.82 per lin. ft.; taken under advisement; Leith st., Hoagland ave. to Calhoun st., John Brooks, tarvia, \$4.23 per lin. ft.; taken under advisement; Leith st., Calhoun to Hanna st., Tripp & Son, block, \$7.20; Barber Asphalt Co., asphalt, \$7.33; Moellering Construction Co., block, \$7.58; preliminary order for block; Lafayette st. at Leith st., Tripp & Son, block, \$7.20; Barber Asphalt Co., asphalt, \$7.33; Moellering Construction Co., block, \$7.53; preliminary order for brick; Pontiac, Webster to Calhoun, Tripp & Son, block, \$7.20; Barber Asphalt Co., asphalt, \$7.47; Moellering Construction Co., block, \$7.49; Derheimer & Co., Athens or Nelsonville block, \$7.45; Bessemer repressed block, \$7.48; preliminary order for asphalt; Meyer ave., Fairfield ave. to South Wayne ave., Barber Asphalt Co., \$5.61; Moellering Construction Co., \$5.66; Derheimer & Co., Athens or Nelsonville block, \$5.83; Bessemer repressed block, \$5.90; preliminary order for asphalt; Wayne st., Nelson st. to west line of Fleming addition, John Brooks, tarvia, \$4.57; taken under advisement; Webster st., Berry to Main st., Barber Asphalt Co., asphalt, \$7.86; Moellering Construction Co., block, \$7.79; Asphalt Block Co., \$8.52, \$8.22 and \$7.92 for 3, 2 1/2 and 2-in. block, respectively; O. F. Menefee, block, \$6.45; preliminary order for asphalt; Calhoun st., Superior to Eureka st., Barber Asphalt Co., asphalt, \$10.56; Moellering Construction Co., \$10.48; Derheimer & Co., Athens or Nelsonville block, \$10.15; Bessemer repressed block, \$10.17; O. F. Menefee, block, \$9.08; preliminary order for brick.

Marion, Ind.—Improvement of Adams st., Dillard Artis, \$6.87 1/2 per ft., using Metropolitan or Culver block or for \$6.49 with Terre Haute block; J. W. Edger, by William Yates, \$6.88 per ft. with Metropolitan or any good paving block, sand filler, and Bedford limestone curbing.

New Orleans, La.—Paving De Soto st., Moss Eagan Bros., \$16,283, and Howard ave., Hyland & Co., \$10,603.

Ft. Missoula, Mont.—Walks and curbs, John E. Wilson, Missoula, \$5,870; W. M. Germain and W. M. Beacon, Missoula, \$6,550, and Miracle-Tripp Concrete Co., Missoula, \$5,503.

Camden, N. J.—Building Chapel road, Merchantville, distance about three-quarters of a mile, to E. B. Humphrey, Hackensack, \$12,114.83; J. F. Shanley Co., Philadelphia, \$12,283.63; Kelly & McFeeley Co., city, \$12,291.15; Bates & Gibbs, Clementon, \$12,164.01; the road is to be of Amesite.

Trenton, N. J.—Building two-story brick annex to fire headquarters, Joseph Smith & Son, \$2,475; Nicholas Seeger & Son, \$2,535; Bellon & Hamilton, \$2,570; Carl Poinsett, \$2,680.

New York, N. Y.—Regulating and repaving with sheet asphalt pavement on a concrete foundation the road of the following streets and avenues: (1) Fourth ave., from the north side of 23d st. to north side of 32d st.; (2) Madison ave., from the north side of 42d st. to north side of 50th st.; (3) Waverly pl., from the west side of Broadway to east side of 5th ave.; (4) Centre st., from south side of Centre Market pl., from Grand st. to south side of Brooks st.; (5) East 23d st., from west side of 1st ave. to east side of Madison ave.; (11) Long Acre Square, from the south side of 43d st. to the north side of 47th st., Broadway, from the north side of 42d st. to the south side of 43d st. and 7th ave., from the north side of 42d st. to south side of 43d st.: (1) Barber Asphalt Paving Co., 30 Church st., \$29,-613; Uvalde Asphalt Paving Co., 1 Broadway, \$34,310; Sicilian Asphalt Paving Co., 41 Park Row, \$32,368; (2) Barber Asphalt Paving Co., \$18,808; Uvalde Asphalt Paving Co., \$20,203; Sicilian Asphalt Paving Co., \$19,674; (3) Barber Asphalt Paving Co., \$11,298; Uvalde Asphalt Paving Co., \$11,256; Sicilian Asphalt Paving Co., \$12,517; (4) Barber Asphalt Paving Co., \$9,375; Sicilian Asphalt Paving Co., \$9,682; Uvalde Asphalt Paving Co., \$10,696; (5) Barber Asphalt Paving Co., \$19,895; Uvalde Asphalt Paving Co., \$22,990; Sicilian Asphalt Paving Co., \$22,290; (11) Barber Asphalt Paving Co., \$37,621; Uvalde Asphalt Paving Co., \$47,169; Sicilian Asphalt Paving Co., \$47,711; regulating and repaving with wood block pavement on the following streets and avenues: (9) First ave., from the north side of 25th st. to the north side of 26th st.; (10) Washington st., South, from the east side of Washington Square, to the east side of Washington Square, West; (9) Barber Asphalt Paving Co., \$11,536; Uvalde Asphalt Paving Co., \$11,608; U. S. Wood Preserving Co., 165 Broadway, \$11,825; Em-

pire City Contracting Co., World Bldg., \$11,721; Republic Construction Co., \$10,120; (10) Barber Asphalt Paving Co., \$14,374; Uvalde Asphalt Paving Co., \$14,153; U. S. Wood Preserving Co., \$14,099; Empire City Contracting Co., \$14,641; Republic Construction Co., \$13,902; for (16) regulating and paving with granite block pavement on a concrete foundation the roadway of 153d st., from Broadway to Riverside Drive; (19) 215th st., from Broadway to a point 450 ft. east of 9th ave.; (16) Asphalt Construction Co., Madison ave. and 137th st., \$11,600; Atlanta Contracting Co., 230 East 42d st., \$12,502; W. J. Fitzgerald, 547 West 45th st., \$10,904; (19) Harlem Contracting Co., 2 Rector st., \$20,417; Barber Asphalt Paving Co., \$21,317.

Syracuse, N. Y.—F. J. Baker, paving Park ave., \$9,148.35 on asphalt with stone curb and \$9,312.35 on block pavement with stone curb; Lakeview ave., \$6,981.85 on asphalt with stone curb and \$7,102.10 on block pavement with stone curb.

Columbus, O.—Paving eleven streets and building several sewers as follows: Perry st., S. T. Knight, tar filler \$4,317, cement filler \$4,277, asphalt filler \$4,735; H. J. Shaw, tar filler \$4,360, \$4,280 and \$4,580; Geigle, Barnes & Co., \$4,233, \$4,173 and \$4,-533; Budd & Bartling, 4,527, \$4,407 and \$4,-627; G. W. Patterson & Son, \$4,201, \$4,161 and \$4,401; John C. Beasley, \$4,217, \$4,197 and \$4,417; Lazell st., H. J. Shaw, \$11,391, \$11,250 and \$11,814; William M. Graham, \$12,089, \$11,948 and \$12,653; John C. Beasley, \$11,633, \$11,586 and \$12,056; Geigle, Barnes & Co., \$11,046, \$10,905 and \$12,033; Harrison ave., Geigle, Barnes & Co., \$12,-670, \$12,493 and \$13,024; Budd & Bartling, \$14,005, \$13,650 and \$14,300; George W. Patterson & Son, \$12,437, \$12,555 and \$13,145; John C. Beasley, \$12,905 (cement filler), \$12,-884 and \$13,495.50; H. J. Shaw, \$13,093, \$12,-857 and \$13,624; S. T. Knight, \$12,497, \$12,-379 and \$13,854; Abbott ave., Geigle, Barnes & Co., \$7,798, \$7,720 and \$8,240; H. E. Barthman, tar filler \$7,557, asphalt filler \$7,817; John C. Beasley, tar filler \$8,159, cement filler \$8,133, asphalt filler \$8,419; A. G. Pugh, \$8,499, \$8,519 and \$8,599; Sixth ave., Geigle, Barnes & Co., 3,810, \$3,762 and \$4,050; Budd & Bartling, \$3,837, \$2,741 and \$3,917; George W. Patterson & Son, \$3,607, \$3,576 and \$3,768; John C. Beasley, 3,798, \$3,782 and \$3,942; H. J. Shaw, \$3,664, \$3,616 and \$3,824; Frankfort st., William M. Graham, tar filler, \$5,005, \$4,975 and \$5,155; Geigle, Barnes & Co., \$4,731, \$4,686 and \$4,-956; Wolfel st., Geigle, Barnes & Co., \$5,452, \$5,382 and \$5,852; William M. Graham, \$5,678, \$5,584 and \$5,913; H. J. Shaw, \$5,602, \$5,531 and \$5,813; Third st., Geigle, Barnes & Co., \$7,960, \$7,871 and \$8,441; Budd & Bartling, \$8,103, \$7,923 and \$8,253; William M. Graham, \$7,654, \$7,564 and \$8,164; 22d st., Geigle, Barnes & Co., \$11,913, \$11,-805 and \$12,417; H. E. Barthman, tar filler, \$11,560, asphalt filler \$11,920; William M. Graham, tar filler \$12,568, cement filler \$12,-496, asphalt filler \$13,036; A. G. Pugh, \$12,-842, \$12,859 and \$12,910; Ludlow st., Geigle, Barnes & Co., \$3,158, \$3,113 and \$3,398; Sewer in Fairmont ave., George F. Ames, \$8,886; J. O. Jones, \$7,002; John C. Beasley, \$10,230.

Galveston, Tex.—Repairing brick pavement on Market st.: S. C. Leonard, for taking up and relaying about 781 sq. yds. of paving, 74c. per sq. yd.; for about 30,000 vitrified brick, \$24 per thousand; Kelso & Vautrin, for taking up and laying paving, 73c. per yd.; for brick, \$23 per thousand.

SEWERAGE

Attalla, Ala.—Date of receiving bids for construction of sewers and appurtenances has been postponed.—William Hill, Gadsden, Engineer; L. S. Gray, Town Clerk.

Phoenix, Ariz.—Citizens have voted \$400,-000 bonds for installation of sewer system.—L. B. Christy, Mayor.

Pine Bluff, Ark.—Council has decided to construct sanitary sewer system in Sewer District No. 13.

Texarkana, Ark.—City will construct sewer system in district comprising 33 squares.

Alturas, Cal.—Spaulding, Sloan & Robson, Consulting Engineers, San Francisco, will prepare estimates for proposed sewerage and water system.

Hollister, Cal.—Town Trustees have adopted plans and specifications drawn by City Engineer Winn for 6-in. sewer on Central ave.

Pasadena, Cal.—Council is considering construction of sewers on about 11 streets.

Stockton, Cal.—Plans have been completed by City Engineer for disposal of the city sewage; also the increase of the water front by about five miles.

Golden, Col.—City Engineer W. F. Allison has completed plans for establishment of sewers in Golden Sanitary Sewer District 2; cost about \$10,483.

East Hartford, Conn.—Engineer has been ordered to prepare plans for a sewer on Francis st.

La Grange, Ill.—Board of Local Improvement is considering construction of outlet sewer system, including electrical pumping plant to force sewage into present septic tank.

Moline, Ill.—City Engineer H. G. Pad-dock is busy on sanitary sewerage and storm drain; work provides for laying of approximately six miles of storm drain.

Quincy, Ill.—Council has passed four ordinances recommended by Board of Local Improvements, which authorize letting of contracts for pipe sewers in northern part of city; total estimated cost \$7,043.

Evansville, Ind.—Board of Public Works has ordered construction of sewer on 2d ave.

Jeffersonville, Ind.—Council has adopted the resolution providing for construction of sewer on Pearl st. with branch sewers on Maple, Chestnut and Market sts.—V. W. Lyons, City Engineer.

Michigan City, Ind.—Petition for 8-in. sewer on Wabash st. has been presented.

Terre Haute, Ind.—Bonds of \$40,000 have been sold for sewer extensions; City Engineer Roberts, on Aug. 1, recommended a route for a new sewer line to drain the city from 30th st. to 8th ave. east and north to city limits; cost about \$40,000.

Mt. Vernon, Ia.—Surveys are being made for construction of sewer system.

Winterset, Ia.—Surveys have been completed by the W. K. Palmer Co., Engineers, Kansas City, Mo., for a complete sewer system for city; plans and specifications will be finished very shortly.

Lincolnville, La.—Council is considering petition for construction of sanitary sewer.

Annapolis, Md.—Council is considering plan for construction of sewage pumping plant.

Manchester, Mass.—Construction of sewer system is being considered.

Pine City, Minn.—Citizens have voted \$20,000 bonds for sewer and water systems.

Amory, Miss.—City is considering issuance of sewer bonds.—J. P. Johnston, Mayor.

Kansas City, Mo.—Theo. S. Jones, Superintendent Street Repair Department, has recommended purchase of a Suben sewer cleaner for each district.

Springfield, Mo.—Cost of constructing sewer in District No. 16 has been estimated by City Engineer Harry G. Horton at \$1,989; sewer in Walter st. and number of connecting mains at \$21,470.

St. Joseph, Mo.—Council has passed ordinance to construct sewers in District No. 121 and two other districts.

St. Louis, Mo.—Board of Public Improvements has ordered construction of section No. 425 of Harlem Creek, cost \$122,500, and Glaise Creek No. 4 sewer system, at cost of \$55,000.

Caldwell, N. J.—Sewerage Commission has presented report to Council recommending immediate action in sewerage entire town and draining to disposal plant to be erected in the western extremity of West Caldwell at total approximate cost of \$80,000.—J. W. Gosman, Chairman.

Hackensack, N. J.—The Improvement Commission has selected Lemuel Lozier to make drawings and decide on most efficient and economical manner of constructing sewage disposal plant.

Pleasant Ridge, O.—Council is considering \$125,000 bond issue for construction of sewers and a sewage disposal plant.

Portsmouth, O.—Council has passed resolution for \$6,000 bond issue for the construction of sewers.—Wm. N. Gableman, Clerk.

Corvallis, Ore.—Council has decided to construct sewers in District 3; cost \$99,018; also in District 4, cost \$55,603.

Bellevernon, Pa.—Boroughs of Bellevernon, Charleroi, Monessen, Donora, North Charleroi and Webster are considering construction of joint sewage disposal plant.

Canonsburg, Pa.—Borough Council will soon consider construction of sewage disposal plant.

Harrisburg, Pa.—City Engineer Cowden is preparing the specifications of sewers that will be built this year under \$100,000 loan item for sewer extensions.

Rochester, Pa.—Citizens will vote in November on \$25,000 bonds for sewers.

Susquehanna, Pa.—State Engineer Shaw, of Harrisburg, has completed plans for sewer system; cost about \$25,000.

Woonsocket, R. I.—Aldermen have concurred in resolution appropriating \$3,000 for top dressing sewer filter beds.

Madison, S. D.—Missouri Valley Engineering Co. is completing survey for sewer system.

San Antonio, Tex.—Sewer Committee of City Council has reported favorably upon petition of residents and property owners on River and Brackenridge aves. asking for extension of sewers in this section.

Seattle, Wash.—City Engineer R. H. Thomson has recommended following im-

provements: 15th ave., New York, sewers, \$5,900; East Mercer st. and other streets, sewers, \$2,600.

Spokane, Wash.—Bids will be readvertised for construction of sewer in Third Ward.

Evansville, Wis.—Bids will be received until Sept. 6 for supervising engineer to supervise and look after installation of a sewage plant.—F. W. Gillman, City Clerk.

CONTRACTS AWARDED

Alameda, Cal.—Constructing vit. iron stone pipe sewers, to W. J. Schmidt, 2121 Shattuck Bldg., Berkeley, \$14,801.

Horton, Kan.—Sewer, to Inter-Mountain Bridge and Construction Co., Tecumseh, Neb., \$34,081.27; other bidders, C. U. Heuser, Salt Lake City, Utah, total \$34,709.40; Kelly & Carter, St. Joseph, Mo., total \$37,781.50; E. D. Reed, Clay Center, Kan., total \$35,289; Olson & Schmidt, St. Joseph, Mo., total \$35,450.81; Hamilton Bros., Newton, Kan., total \$32,911.55, did not bid on all items.—W. B. Hazen, St. Joseph, Mo., Engineer.

New Orleans, La.—W. J. Hardee, City Engineer, recommended acceptance of bid of Standard Paving and Construction Co., city, \$20,291.50, for construction of subsurface drainage on Howard ave., and of Barber Asphalt Paving Co., Philadelphia, Pa., for subsurface drainage for De Soto st. repaving.

Saginaw, Mich.—To Saginaw Bridge Co., for constructing Mackinaw st. sewer, \$17,337.50.

Jersey City, N. J.—To Michael J. Curley, for building 400 ft. of sewer on West Side ave., \$1 99-100 per cent of standard price; to Bernard Gannon, for 330 ft. of sewer in Terrace ave., \$8 25-100 per cent.

Rahway, N. J.—Westfield ave. sewer, 667 ft. of 8-in., 62 ft. of 15-in. and 1,356 6-10 ft. of 10-in. sewer pipe, to Matthew Wade, Elizabeth, \$1,752.19.

Ventnor City, N. J.—Constructing sewage disposal works from plans of W. I. Risley, Real Estate and Law Bldg., Atlantic City, as follows: (a) Concrete tank for disinfection of sewage and storage to take hold same during high tide, dimensions 102 x 48 x 10 ft.; (b) concrete tank for disinfection of sewage and pumping outfit, 52 x 10 x 10 ft., to L. H. Henry, 10 Windsor ave., Atlantic City, (a) \$13,994, (b) \$4,669; other bidders, Atlantic Concrete and Supply Co., Bartlett Bldg., Atlantic City, (a) \$13,700, (b) \$5,764; United Paving Co., Bartlett Bldg., Atlantic City, (a) \$15,748, (b) \$4,975.47; W. W. Lindsay & Co., Harrison Bldg., Philadelphia, Pa., (a) \$19,000, (b) \$7,900.

Niles, O.—Construction of sewers in Sub-division No. 1 of Sewer District No. 3, to the William Lehman Co., Cleveland, \$21,769; other bidders were: W. E. Gartland, Youngstown, \$26,612; C. L. Allen, Marion, \$24,828; V. Mango, Niles, \$24,695; W. H. Rolston, Mt. Vernon, \$24,797.

Hazleton, Pa.—Constructing sewers, bids opened July 29, to A. A. Reed Construction Co., 116 Acacia st.

Scranton, Pa.—To Fabrizio D'Andrea, for building the Tenth Ward sewer, \$3.50 per lin. ft.; cost will be approximately \$25,000.

South Fork, Pa.—Extensive addition to sewer system, to W. T. Burkett, city, from plans by Borough Engineer O. P. Thomas, \$5,334.91.

Union City, Tenn.—To Sullivan & Long, Bessemer, Ala., \$28,484 to construct sew-

erage system, including septic tank, flush tanks, etc.

Tacoma, Wash.—To Joe Warter & Co., for West End storm sewer, \$58,500.

Toronto, Ont., Can.—To the Orpen Co., city, for construction section 6 of high level intercepting sewer, 1,340 lin. ft. reinforced concrete pipe, \$23.07 per lin. ft.—A. C. D. Blanchard, Engineer in Charge.

BIDS RECEIVED

Newport, Ark.—Construction of a sewer system: Pouncey Paving & Constr. Co., Helena, \$37,889; Municipal Eng. & Constr. Co., Chattanooga, Tenn., \$37,321; H. S. Bosler, Chattanooga, Tenn., \$35,364; Jos. McCoppin, Little Rock, \$35,159; Noble & Gardner, Paducah, Ky., \$33,645; Kress Constr. Co., Stuttgart, \$30,747.

Colton, Cal.—Constructing a sewer system, consisting of sewers, laterals, flush tanks and manholes, Watson & Spicer, Colorado Springs, lowest bidder, \$53,000.—W. L. Brown, City Engineer.

Grand Rapids, Mich.—Sewers on N. Ot-tawa and other streets: Verhey & Kloote, \$39,030; Peter De Wit, \$45,167, and A. H. Prange, \$50,717.

Salem, Ore.—Extending the Marion st. sewer: Owl Constr. Co., \$24,210; Geo. Gordon, Portland, \$21,500; F. A. Erixon, Salem, \$24,437.

Mars, Pa.—Construction of three miles of sewers, Jones Bros., Carnegie, \$15,800; Frank Monell, Pittsburgh, \$16,800; Maynard & Flynn, Pittsburgh, \$21,375; F. E. McQuis-tion, Butler, \$21,050; N. J. Boyer, Butler, \$21,500.

WATER SUPPLY

Fairfield, Ark.—Citizens have voted \$50,000 bonds for improving water system.

Paris, Ark.—Council is considering \$75,000 bond issue for construction of water works.

Alturas, Cal.—Board of Trustees has selected Spaulding, Sloan & Robson, Consulting Engineers, San Francisco, to prepare estimates for water and sewerage system.

Butte City, Cal.—Water works at this place has been completely destroyed by fire.

Porterville, Cal.—Trustees are considering \$25,000 expenditure for auxiliary water plant, consisting of a 500,000-gal. reservoir and larger distributing mains.

Santa Ana, Cal.—Freehold Water Co. has been incorporated, capital \$100,000, to build reservoirs and to furnish and distribute water for domestic and irrigating purposes.—E. H. Kennard and John D. Pope, Los Angeles; F. E. O'Meara, Salt Lake City, Utah, and others, incorporators.

Cheyenne Wells, Col.—Citizens have voted \$12,000 bonds for water works; bids for construction will be received about Aug. 25.—W. E. Cain, Mayor.

Clinton, Col.—G. W. Thompson is interested in proposed installation of water plant.

Collbran, Col.—City proposes to construct water works; cost about \$5,000.—R. P. Hil-leary, Engineer.

Denver, Col.—Water Commission will purchase and lay more than a mile of 12-in. water main on Jewell st.

Olathe, Col.—Construction of water works is being considered.

Washington, D. C.—Capt. W. T. Han-nun, Engineer in charge of local water supply system, has recommended increased water supply with Patuxent River as its

Gallion, O.—Following are successful bidders on sewer work in eight districts: District 1, U. S. Construction Co., Columbus, \$1,744.57; also District 2, \$1,559.51, and District 3, \$3,791.78; District 6, W. H. Ralston, Mt. Vernon, \$3,579.32; District 7, C. L. Allen, Marion, \$7,680.31; District 8, A. J. Stough, city, \$8,946.14; District 9, C. L. Allen, \$9,773; District 11, W. H. Ralston, \$2,709.55.—A. O. Theobald, City Engineer.

Details of bids of successful bidders:

	No. 1	No. 2	No. 3	No. 5*	No. 6	No. 7	No. 8	No. 9	No. 11
Earth excavation.....	\$0.48	\$0.48	\$0.49	\$0.38	\$0.45	\$0.60	\$0.50	\$0.55	\$0.45
Excavation for siphon.....					50.00		120.00		
Brick masonry.....	8.75	8.75	8.75	12.00	9.00	10.00	8.00	10.00	9.00
Concrete.....	5.90	5.90	5.90	8.00	5.00	7.00	10.00	7.00	5.00
Laying sewer, 8"-10".....	.06½	.06½	.06½	.06	.10	.05	.06	.05	.10
" " 12".....				.08	.12				
" " 15"-18".....				.10				.10	
" " subdrain.....	.13	.13	.13	.11	.07	.03	.10	.03	.07
Standard manhole tops.....	8.50	8.50	8.50	8.50	7.00	8.50	4.00	8.50	7.00
Tight manhole tops.....					7.00				
Manhole pans.....	2.50	2.50	2.50	3.00	.50	1.50	1.00	1.50	.50
Steps.....	.25	.25	.25	.20	.20	.10	.30	.10	.20
Timber foundation.....	16.00	16.00	16.00		25.00				25.00
Sheeting—left in.....		16.00	16.00						
Furnishing sewer pipe.....	79%	79%	79%	80%	80%	83%	82%	83%	80%
Y poles.....	.05	.05	.05	.05	.05	.10	.30	.10	.05
Cast-iron pipe.....				29.00	28.88	50.00	40.00		
" " specials.....					40.50		40.00		
Inspecting covers.....	1.00	1.00	1.00	3.00	11.00	1.50	2.00	1.50	1.00
Vent caps.....									
8" flap-gate.....		10.50	10.50	9.00	10.00	10.50	15.00	10.50	10.00
8" siphon & Hood.....					100.00		100.00		

* Contract not awarded as all bids were above Engineer's estimate as here given; total \$10,415.04.

source; prompt metering of public and private buildings and parks, construction and operation of a plant in Georgetown for purification of supply, immediate attention to unlined section of Washington Aqueduct tunnels.

Chicago, Ill.—Bids will be received for construction of water supply and drainage system at municipal playgrounds on Hamlin ave. Special Park Commission, 200 Randolph st., can be addressed.

Tuscola, Ill.—Water main will be laid in Ohio st.; distance one mile.

Independence, Kan.—City is considering improving the water works system and installing settling basins.—A. D. Stivers, City Engineer.

Kansas City, Kan.—Water Commissioners of Kansas City, Kan., and the Fire and Water Board of Kansas City, Mo., are discussing plans for protecting two municipal water plants at Quindaro.

Mer Rouge, La.—City will construct steel tank; capacity 50,000 gals.

Baltimore, Md.—Business men in vicinity of Clement and Webster sts., South Baltimore, have pledged \$2,500 for installation of larger water mains in that vicinity.

Shepherdstown, Md.—Installation of water works at cost of \$20,000 is being considered.

Escanaba, Mich.—T. W. Orbison, Appleton, Wis., has completed plans for dam two miles above city.

Iron River, Mich.—Citizens have voted \$10,000 bonds to enlarge water system.

Imlay City, Mich.—Bids will be received Aug. 23, 6 p. m., for \$12,000 water works bonds.—Ward Cornell, Village Clerk.

Granite Falls, Minn.—Citizens have voted \$40,000 bonds to improve water system.—H. L. Kalem, City Clerk.

Pine City, Minn.—Citizens have voted \$20,000 bonds for water works and sewer systems.

Seminary, Miss.—Bonds, \$10,000, have been sold for constructing water works and to complete school.

Columbia, Mo.—Citizens will vote Aug. 27 on \$120,000 bonds for installing water and light plant.

Bridgeport, Neb.—Citizens will soon vote on bonds for construction of water works.

Omaha, Neb.—Ordinance providing for issuance of water bonds to amount of \$6,500, 000 for water works purchase will be asked for by Water Board.

Fallon, Nev.—Council has passed an ordinance authorizing establishment, building and construction of water works system for domestic use, manufacturing and fire protection for city.—C. L. Noble, Clerk.

Atlantic Highlands, N. J.—New filters will be purchased at cost of \$3,500 to \$4,500.

Cranford, N. J.—Citizens have decided to appropriate \$4,000 for preliminary work and estimating cost of establishment of a municipal water plant.

Rahway, N. J.—Water Board is considering purchase of pump; cost about \$1,500.

Oswego, N. Y.—Plans have been completed for a new dam in Oswego River, for increased water supply.—F. W. Ormsby, Superintendent Department of Water.

Rutherfordton, N. C.—Citizens have voted \$35,000 bonds for construction of water and electric light plant.

Hettinger, N. D.—D. Cuyler Washburn, Aberdeen, S. D., is making surveys for water works.

Nottingham, O.—Bids will be received until Aug. 26 for \$19,758 water and sewer bonds.—J. C. Steinicke, Village Clerk.

Oakley, O.—Bids will be received Aug. 23, noon, for \$1,600 water pipe bonds.—Oscar Kosche, Village Clerk.

Utica, O.—S. S. Wyer, Consulting Engineer, Columbus, will prepare plans for proposed water works system.

Wetumka, Okla.—City will shortly be in market for water and electrical supplies for new plant on which work has just been started.—C. B. Huggins, City Clerk.

Bristol, Pa.—Authority to establish municipal water plant has been received by Bristol from State Board of Health, but borough will again try to buy existing plant before acting finally.

Erie Pa.—Water Commissioners may drill the test well on peninsula to depth of 3,500 ft.

Lancaster, Pa.—Council has authorized \$75,000 bond issue for improvements to the water works.

Sharpsville, Pa.—Installation of meter system is being considered.

Smithton, Pa.—Bids will be received about Sept. 1 for water works improvements, cost about \$10,000, for Smithton Electric Light and Water Co.—John Hengstler, Scottsdale, Engineer.

Woonsocket, R. I.—Ordinance has been passed adding \$1600 to water construction appropriation for laying water mains on Knight st.

Bradley, S. D.—Construction of water works is being considered.

Provo, Utah.—Bids will be received Aug.

29 for \$80,000 water bonds.—Ralph Elliott, City Recorder.

Houquiam, Wash.—Installation and construction of joint water supply system to be erected by two cities of Houquiam and Aberdeen is being considered; Engineers of both cities have been instructed to get all possible data; cost \$1,000,000.

Snohomish, Wash.—Citizens will vote Aug. 29 on \$100,000 bonds to install water system.

Walla Walla, Wash.—Mayor Eugene Tausick is favorable to construction of reservoir.

Morgantown, W. Va.—Water Committee has recommended bond issue of \$68,000 for the purpose of moving pumping station to the Tygards Valley and laying of larger mains throughout city; new pump will be purchased.

Eau Claire, Wis.—Plans are being prepared by City Engineer C. G. Moore for a reinforced concrete reservoir, 400,000-gals. capacity, at the pumping station.—J. C. Fennessey, City Clerk.

Gresham, Wis.—City proposes to construct water works.—W. G. Kirchoffer, Madison, Engineer.

Marshfield, Wis.—Plans are being prepared for 350,000-gal. concrete reservoir; cost \$4,000.

Rice Lake, Wis.—Material will be purchased for water extensions.

Walworth, Wis.—Construction of water works is being considered.

Balmy Beach, Ont., Can.—Plans have been prepared for extension of water system.

Vernon, B. C., Can.—Bids will be received until Aug. 29 by S. Somerville, City Treasurer, for \$10,000 water works extension bonds, and \$8,000 for cement walks and \$3,500 for sewer extension.

CONTRACTS AWARDED

Gadsden, Ala.—Water works, to Casey-Hedges Co., Chattanooga, for boilers; to Henry R. Worthington Co., New York, for pump, water heater and turbo-centrifugal engine; to Laidlaw, Dunn, Gordon & Co., New York, for 3,000,000-gal. pump; to Central Contracting and Construction Co., Atlanta, for general construction and filters; work is to be started during this month and completed within 150 working days after it is started.

Newport, Ark.—To Roberts Filter Mfg. Co., Philadelphia, Pa., for constructing filter plant for Newport Water, Light and Power Co.; cost about \$6,500.

Chico, Cal.—To Chico Water and Supply Co., to furnish water for streets and for domestic use by City Trustees.

San Francisco, Cal.—To the Ralsch Improvement Co., 109 Montgomery st., city, \$44,705, for hauling and laying of high-pressure mains, conduits and appurtenances from the Twin Peaks reservoir to Scott st. and to Castro st.—Marsden Manson, City Engineer.

Yreka, Cal.—To Mowrey & McDonald, for running open cut and the placing of a concrete dam in bed of Yreka Creek, \$2,486.

Washington, D. C.—To the Glamorgan Pipe and Foundry Co., Lynchburg, Va., for c-i. pipe.

Dundee, Ill.—Laying water mains, furnishing hydrants and valves, to Thos. Iglehart, 217 La Salle st., Chicago, \$9,966.—The W. S. Shields Co., Chicago, Engineers.

Louisville, Ky.—Cleaning mud from both sections of Crescent Hill reservoir and concreting bottoms of both basins, to Mansfield Engineering Co., Indianapolis; removing 90,000 cu. yds. mud, 49c. per cu. yd.; laying 11,000 cu. yds. concrete, \$4.95.

Janesville, Minn.—Installation of water works system, to W. D. Lovell, Minneapolis, \$5,783; other bidders, Otto Walin, St. Peter, \$8,075; John Keogh, St. Peter, \$7,757; William C. Fraser, Rochester, \$5,856; G. A. Haggart, Fargo, N. D., \$7,250; G. E. Knudson, Waseca, \$5,937; Des Moines Steel and Iron Co., Des Moines, Ia., \$5,860; O. F. Doyle, St. Cloud, \$6,553; J. A. Trane, La Crosse, Wis., \$6,573; Boswell Bros., Ada, \$6,467; J. R. Thompson, Mankato, \$6,646; C. H. Rickman, Janesville, \$5,997.

Minneapolis, Minn.—To U. S. C. I. Pipe & Foundry Co., Birmingham, Ala., for 60,000 ft. of water pipe, consisting of about 6,000 tons, \$24 to \$24.50 per ton; total cost about \$150,000.

Great Falls, Mont.—Laying a 16-in. water main on 2d st., to Nilson & Smith, \$2,830.

Perry, N. Y.—Furnishing and erecting 2,000 000-gal cross-compound crank and fly-wheel Corliss condensing pumping engine, to Laidlaw-Dunn-Gordon Co., 115 Broadway, New York.

Rugby, N. D.—Constructing 6 and 4-in. water mains in 2d, 3d, Main, De Smet and Foster sts., about 9,607 lin. ft. pipe and 18 hydrants, to L. W. Scruth, Fargo, \$11,327; other bidders, Gilbert W. Haggart, Fargo, \$12,076; Frazer & Danforth, Rochester, Minn., \$11,738, and W. D. Lovell, Minneapolis, \$12,399.

Joseph, Ore.—To James M. Mitchell, installing water system, \$16,800.

Portland, Ore.—Water mains, to John Contracting Co., for mains on Brazil, Alberta, Thurman sts., \$25,869; to Wm. Stevenson, for mains on E. Washington and Hancock sts., \$7,188; to Oregon Iron and Steel Co., mains on E. Harrison st. and Mississippi ave., \$16,348; to National Contracting Co., mains on 4th st., \$5,987, and Barber Asphalt Co., mains on E. Gibson st., \$24,571.

Edinboro, Pa.—Constructing water works to M. D. Reynolds, Edinboro.—Whitman & Brown, Chapin Blk., Buffalo, N. Y., Engineers.

Dallas, Tex.—To Joe B. Winslett, Jr., & Co., for laying 24-in. water main on Haskell ave. from Swiss to Gaston, 20-in. on Haskell from Gaston to East Side, and 18-in. main on Haskell from Swiss to Juliette; no fire plugs are to be placed and no 6-in. mains laid; \$4,343; other bids were D. J. Grigsby, \$4,418; Dallas Home Improvement Co., \$4,786; C. W. Olcott, \$4,951.75; John C. Underwood, \$12,452.90.

Waterloo, Wis.—Erection of water tower, to Chicago Bridge and Iron Co., Chicago, \$5,440; other bidders, Continental Bridge Co., Peotone, Ill., \$5,820, and the Des Moines Bridge and Iron Co., Des Moines, Ia., \$5,640.

LIGHTING AND POWER

Livingston, Ala.—Livingston Light and Improvement Co., Livingston, has been incorporated, with a capital stock of \$5,000, for operation of lighting plant.—J. A. McConnell, P. B. Jamison, J. W. McBeth and others, Incorporators.

Tusculum, Ala.—City has decided to install electric plant.

Colton, Cal.—Plans are being considered for extension of ornamental street lighting system.—Earl M. Crilly, Manager Municipal Electric Light Plant.

Merced, Cal.—San Joaquin Valley Light and Power Co. will extend its line into city; will also erect a power plant.—A. G. Wishon, Fresno, President.

Pomona, Cal.—Trustees have instructed Park Superintendent J. M. Paige to investigate cost of installation of a lighting system in Ganesha Park.

Stockton, Cal.—San Joaquin County Supervisors have instructed County Engineer Frank C. Quail to prepare plans and estimates for electric plant to furnish power for lighting the jail and court house.

Watts, Cal.—Council has decided to employ engineer to estimate on cost of erecting gas plant to supply entire city.

Washington, D. C.—Capital Traction Co. will make improvements to its main power plant by rebuilding the station and increasing the output by 6,000 kw.; cost \$250,000.—T. H. Hanna, Chief Engineer.

Royston, Ga.—D. W. Brooks will construct water power electrical plant on Broad River at Brooks Shoals and furnish electricity for lighting and power.

Macomb, Ill.—McDonough County Commissioners did not let contract for lighting plant to light almshouse and surrounding buildings by electricity.—H. M. Grigsley, County Clerk.

Anderson, Ind.—The Union Gas, Light and Fuel Co. will soon let contract for construction and equipment of an artificial gas plant.—C. W. Hoover, Secretary.

Bristol, Ind.—Bristol Power Co. is considering erection of plant.

Marion, Ind.—Marion Light and Heating Co. has submitted to Council proposal to light the city streets at \$57.50 an arc light a year, and to decrease kw. price to private consumers from 10c. to 8c.; cost to the city of maintaining a plant for street lighting is computed to amount to about \$75 a year for each arc light burned; Council has taken proposition under advisement.

Rockville, Ind.—Town Council has decided to supply the town with new street lamps, changing from direct to alternating current; this will do away with one dynamo, and will improve the system; cost about \$1,500.

Sac City, Ia.—The Sac City Electric Co. is considering installation of a central station steam heating system this summer, also post street lights.—R. W. Richardson, Manager.

Spencer, Ia.—Business men have secured \$2,000 for purpose of placing electroliners on business streets.

What Cheer, Ia.—Bids will be received for street lighting contract; present contract expires in November.—W. I. Meade, Mayor.

Hopkinsville, Ky.—City is considering election on \$50,000 bonds for construction of electric light and power plant.

Glasgow, Ky.—Louisville, Lincoln Farm and Mammoth Cave Traction Co. will construct water power and electric plant on Green River.—J. M. Richardson, President.

Thibodaux, La.—Town will construct electric light plant.

FIRE EQUIPMENT

Cambridge, Md.—Edward C. Carrington, 110 East Lexington st., Baltimore, has purchased Gas and Electric Light Co. of Cambridge for clients, who plan to extend operations by supplying electricity for manufacturing.

Salem, Mass.—Chas. T. Main, Boston, is preparing plans for water gas generator house and new purifier house for the Salem Gas Light Co.

Kalamazoo, Mich.—Mayor Farrell has appointed committee consisting of Aldermen Campbell, Verburg and Chidester, to investigate and report back to the Council matters concerning an inspector of gas and gas meters and to learn the expense of suitable apparatus for such inspection.

Gilbert, Minn.—Gilbert Home Electric and Heating Co. has asked Council for franchise.

Lakefield, Minn.—City proposes to improve the municipal electric light plant, including installation of gas-producer engine.

Water Valley, Miss.—City proposes to renew and extend wires, poles and arms at the municipal electric light plant during the summer and fall.—G. R. Wood, City Clerk.

Columbia, Mo.—Citizens will vote Aug. 27 on \$120,000 bonds for installing light and water plant.

Southampton, L. I., N. Y.—State Public Service Commission at Albany has granted Riverhead Electric Light Co. permission to issue \$5,000 bonds for construction and equipment of distributing line from Riverhead to Westhampton Beach; it was also granted permission to furnish electric light to Southampton.—G. H. Perkins, Manager.

Rutherfordton, N. C.—Citizens have voted \$35,000 bonds for construction of electric light system and water works.

Siler City, N. C.—Jos. L. Wrenn is interested in installation of electric light plant.

Fargo, N. D.—Union Light, Heat and Power Co. has decided to erect brick building and install new engine and generator; cost about \$10,000.—M. L. Hibbard, Manager.

Hamilton, O.—Bonds, \$75,000, will be issued for gas works and electric light improvements. H. A. Grimmer City Auditor.

Jackson, O.—Contract will soon be let by Board of Public Affairs for two 100-kw. 4-amp. alternators, and 1 direct-current arc machine of 150 lights.—W. A. Dallas, Clerk.

Wetumka, Okla.—Work has been started on the municipal water and light system by W. W. Cook & Son, Junction City, Kan.; city will be in the market for electrical and water supplies. C. B. Huggins, City Clerk.

Wilkes-Barre, Pa.—Residents of Pringle Township are anxious to have town lighted with arc lights.

Albany, Wis.—W. G. Kirchoffer, Madison, is preparing plans for new water power plant.

La Crosse, Wis.—The Lake Como dam will be rebuilt and power supplied to several towns.

New Holstein, Wis.—Citizens will vote on \$8,000 bonds for equipping municipal lighting plant.

Brockville, Ont., Can.—The Light and Power Department has rejected bids for construction of new power house adjoining pumping station for the purpose of combining the two plants as excessive; work will be done by day labor.

Ottawa, Ont., Can.—Ottawa Light, Heat and Power Co. will construct substation on Slater st.; cost \$18,000.—A. A. Dion, General Superintendent.

CONTRACTS AWARDED

San Francisco, Cal.—To Decker Electric Co., city, for construction of electric light system at Presidio, \$46,000.

Decatur, Ill.—Equipment of light plant, to Ridgeway Co., Ridgeway, Pa., three units, 220-h.p. each, company building both engines and dynamos, \$16,900.—D. W. Mead, Consulting Engineer.

Evanston, Ill.—By North Shore Electric Co., to Allis-Chalmers Co. of Milwaukee, Wis., for additional transformers, including 2,300-5,300-volt, 60-cycle, oil-filled, self-cooled transformers, with rating of 172 kva.

Ft. Greble, R. I.—Installing an underground electric system, to Whitall Electric Co., Westerly, \$2,800.

Bristol, Va.—Lighting city, covering period of five years, to Bristol Gas and Electric Co.; arc lights, \$6 per light per month.

BIDS RECEIVED

Newark, N. J.—Lowest of seven bids for installation of electric light and power plant in courthouse was that of Watson-Flagg Engineering Co., New York, \$26,495; other bidders: Lord Electric Co., \$30,960; A. D. Granger Co., New York, \$39,343; Blackall & Baldwin Co., New York, \$29,343; Storms & Co., city, \$31,496; L. K. Comstock Co., New York, \$31,900, and Paul H. Jaehning, city, \$30,960.

Birmingham, Ala.—Council has decided to purchase auto for Fire Chief Bennett; cost \$2,400; erection of fire station in Pratt City is being considered.

Los Angeles, Cal.—Bids will be asked at once for 12,000 ft. of fire hose for immediate purchase, and for option on 18,000 ft. more at same price, to be taken if needed within six months.

Red Bluff, Cal.—Board of Trustees is considering purchase of gasoline fire engine.

Sacramento, Cal.—Engine and hose wagon will be purchased in near future; engine house will be erected next year in Boulevard Park.

San Francisco, Cal.—National Board of Underwriters has recommended that two motor-propelled hose wagons, each carrying 1,500 ft. of 3½-in. hose, be placed in service near water front; that chemical companies be equipped with motor apparatus of at least 50-h.p.; that all apparatus running on paved streets be equipped with rubber tires; one hose wagon in each district to have turret nozzle, and each ladder truck to be supplied with burst-hose jackets and acetylene gas torches.

Bristol, Conn.—Town will build proposed addition to house of Uncas Hose Co. No. 2.

Washington, D. C.—Bids will be received Sept. 1 for furnishing one straight double 85-gal. tank chemical engine for use in the fire department.—C. H. Rudolph, Commissioner.

Bloomington, Ill.—Architect Geo. H. Miller has prepared plans for erection of fire station.—Henry Mayer, Fire Chief.

Chicago Heights, Ill.—Citizens will vote on \$8,000 bonds for erection of fire station.

Moline, Ill.—Auto fire truck is desired.

—V. Ed. Brown, Chairman, Fire, Water and Light Committee.

Wichita, Kan.—Fire Marshal A. G. Walden has recommended purchase of motor fire truck.

Violetville, Md.—County Commissioners have ordered \$8,000 engine house for town, 2½ stories high, with concrete foundation and slag roof, and up-to-date equipment.—Jacob F. Gerwig, Baltimore, Architect.

Springfield, Mass.—Bids will be received by Board of Fire Commissioners Aug. 15 for erection of a four-story fire headquarters building.

Faribault, Minn.—Council has authorized purchase of a hose cart and reel.

Hibbing, Minn.—Fire Chief McIlhargey has recommended establishment of more fire alarm boxes.

St. Paul, Minn.—Fire Board has received sanction of Assembly committee on streets to application of \$25,000 bond issue for new fire stations and other improvements.

Virginia, Minn.—Plans have been drawn for erection of addition to fire hall; city proposes to equip with hose wagon operated with gas engine; cost \$4,000.

Kansas City, Mo.—City will receive bids Aug. 18 for 10,000 ft. of 2½-in. cotton hose, with Fegh couplings.—Ed. Winstanley, Purchasing Agent.

St. Louis, Mo.—Fire house, cost \$20,000, will be erected on Woodward ave.

Broken Bow, Neb.—Citizens have voted \$17,000 bonds to erect fire headquarters and city hall.

Omaha, Neb.—Fire and Police Board will ask for bids for furnishing uniforms and overcoats for firemen and policemen for period of three years.

Barnsboro, N. J.—Fire Department is securing funds for fire equipment.

Hightstown, N. J.—Erection of combined fire station and city hall, cost \$8,000, is being considered.—John R. Shangle, Mayor.

Long Branch, N. J.—Independent Fire Co. will purchase two sets of swinging harness.

Orange, N. J.—Fire Department desires following equipment for this year: 1,000 ft. of hose, wagon for Hose Co. No. 3 and 1,500 wagon for Canfield st. house.

Paterson, N. J.—Police and Fire Commission has adopted resolution that Fire Department Committee solicit bids for automobile chassis for hose wagon attached to Steamer Co. No. 7.

Paterson, N. J.—Mayor McBride has recommended erection of fire headquarters buildings on Van Houten st., also erection of houses at Stony road and West Paterson.

Corning, N. Y.—Board of Fire Commissioners has under consideration further plans for giving North Side better fire protection, some of which they hope to mature within few months.

Yonkers, N. Y.—Erection of fire house in Tenth Ward is being urged.

Canton, O.—Chief Totten has recommended purchase of 1,000 ft. of hose.

Cincinnati, O.—Bids will be received Aug. 19, noon, for furnishing and delivering one two-horse service ladder truck for the fire department.—Elmer G. Prior, Secretary Board of Public Safety.

Lansdowne, Pa.—Purchase of truck is being considered.

Rogersford, Pa.—Council has appropriated \$850 for fire protection.

Woodlawn, Pa.—Architect Thomas Hannah, Pittsburg, has prepared plans for fire headquarters.

Midvale, Utah.—City is considering erection of fire station.—Hyrum Goff, Mayor.

Richmond, Va.—Board of Fire Commissioners are planning erection of \$11,000 engine house; architect not selected.—L. S. Jones, Secretary.

Seattle, Wash.—Chief Boyle is considering purchase of three auto engines at \$27,000, one second-size horse engine at \$6,500, three third-single horse engines at \$6,000, six auto trucks at \$36,000, and nine auto hose wagons at \$36,000; also proposes \$48,000 for Gamewell central office fire alarm system.

Oconto, Wis.—Committee on Fire Department has been authorized to purchase 500 ft. of hose.

West Allis, Wis.—Installation of fire alarm system is being considered.

CONTRACTS AWARDED

Birmingham, Ala.—To Charles W. Hall, city, for erection of Marshall ave. fire station, \$5,431.

Los Angeles, Cal.—Telephone fire alarms if Council accepts the recommendation of Fire Commission, to Denio Telephone and Fire Alarm Co.

Bristol, Conn.—Building addition to Uncas hose house on North Main st., to Contractor N. E. Nystrom for mason work, and Contractor W. W. Crothers for carpentry work.

Orangeville, Ill.—Water tower to Wiloughby Bear, only bidder, \$1,813.80.

Quincy, Ill.—Motor combination chemical and hose wagon, cost \$4,800, to Seagrave Co., Columbus, O.

Crookston, Minn.—After reconsideration, 1,000 ft. of fire hose to Chicago Fire Hose Co., Chicago, \$1.10 per ft.

Jersey City, N. J.—Fire Equipment, combination chemical wagon, to Boyd Wagon Co., \$1,375; to Eureka Hose Co., 600 ft.; Fabric Hose Co., 700 ft. and Voorhes Rubber Co., 700 ft., all at 90c. a ft.

McAdoo, Pa.—Furnishing 300 ft. of hose, to Eureka Fire Hose and Manufacturing Co., represented by John Smith.

Sharon, Pa.—Furnishing 1,000 ft. of hose, Ulysses, 2½-in., without couplings, to Fruit Oil Co., 85c. per ft.; other bids, same company, Beaver, 90c.; Mastiff, \$1; Columbia, 95c.; bid has 10c. reduction without couplings; Boorklas Co., New Jersey, 2½-in. cotton jacket fire hose, Defiance make, 90c.; Beacon, 90c., with a 5c. reduction without couplings; hose will stand 1,400 lbs. pressure; Fabric Hose Co., Pittsburgh, Red Label, 85c.; Middlesex, 90c.; Standard, 95c.; with 5c. reduction without couplings; Eureka Hose Co., Helmet, 90c.; Trojan, 90c.; with 10c. reduction when no couplings are furnished.

BRIDGES

Aultman, Ariz.—Contract will soon be let for construction of bridge 300 ft. long over Verde River.

Auburn, Cal.—Erection of number of bridges is being considered by Placer County Supervisors.

Pasadena, Cal.—Plans have been drawn up by City Engineer Dupuy for approach in this city of proposed Arroyo bridge; cost \$5,000.

Sonora, Cal.—N. J. Pickle, County Surveyor, has been authorized by Supervisors to prepare plans for bridge across Curtis Creek near Algerine.

Jacksonville, Fla.—City Engineer Phillip Prioleau is preparing plans for reinforced concrete bridge to be constructed across Hogan's Creek on East Bay st.; \$2,500 appropriated; budget for year includes \$3,000 for concrete span over Willow Branch on St. Johns ave.

Live Oak, Fla.—Suwanee and Lafayette counties have rejected and will re-advertise for bids for construction of proposed wagon bridge across Suwanee River at Dowling Park.

Juliaette, Ida.—County Commissioners will construct bridge across Potlatch Creek.

Edwardsport, Ind.—Commissioners of Knox and Daviess counties have adopted plans by J. S. Spiker for a two-span bridge; cost \$17,557.

Shelbyville, Ind.—Plans are being prepared by S. H. Harris, Shelby County Surveyor, for three reinforced concrete bridges; bids will be received about Sept. 1.—G. B. Huntington, County Auditor.

South Bend, Ind.—County Commissioners have decided on improvements to the Colfax and La Salle ave. bridges over East Race.

Shenandoah, Ia.—Council has ordered construction of \$1,400 cement bridge over creek.